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ANALYST STATEMENTS, STOCKHOLDER REACTIONS, AND BANKING RELATIONSHIPS:

DO ANALYSTS' WORDS MATTER?

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ANALYST STATEMENTS, STOCKHOLDER REACTIONS, AND BANKING RELATIONSHIPS:

DO ANALYSTS' WORDS MATTER?

by

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Dissertation

Presented to the Faculty of the Graduate School

of the University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the degree of

Doctor of Philosophy

University of Texas at Austin

May 2009

DEDICATION

This dissertation is dedicated to my Papa and Mai, my father and mother – Peter and Celine Mendonca. Their love of learning, unbridled encouragement, and personal sacrifices spurred me on.

ACKNOWLEDGEMENTS

This dissertation would not have been possible, but for the support of several.

I am indebted to Dr. JoyLynn Reed for her support during the low points of the dissertation. Her moral support especially, but also her guidance in writing and in the communications topics helped me immensely. I am grateful to Dr. John Daly for having faith in my abilities and accepting me as his student. His comments, suggestions, and directions were responsible for improving the quality of the dissertation.

I am thankful to Dr. Larry Browning for taking me into the Ph. D. program even though my background and past education was different from a typical student. His confidence in me started the whole process. Dr. Debra France was the one who planted the seed of doing a Ph. D. I am grateful for her insight. Dr. Terri Moore helped me immensely with her suggestions and feedback during the statistical analyses phase. Her detailed theoretical and practical knowledge in statistics was invaluable.

Dr. Michael Clement and Dr. Sharon Jarvis, my Committee members, were very helpful during my research. Dr. Clement's breadth of experience regarding the subject of analysts made my tasks much easier. Dr. Jarvis' feedback on content analyses issues helped me focus on the right subjects. I would like to thank Dr. Michael Frandsen for his generous help with the data and format questions. Samantha Ieva and Michael Deneen from Thomson Financial were very responsive and generous with their time and provided me with large amounts of data. I appreciate Dr. Susan Corbin for her prompt responses and guidance navigating the Ph. D. program. Finally, I acknowledge my wife, Nancy, and our children, Kenneth and Keegan, for their patience and support during this dissertation.

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Publication No. _____

John Mendonca, Ph.D.
The University of Texas at Austin, 2009

Supervisor: John A. Daly

This dissertation investigates the immediate effects of securities analysts' statements on shareholders. Two of the most important questions posed in research on capital markets are *when* and *how* analysts matter. A time at which analysts might matter is when they make pronouncements regarding a firm or industry; ways in which they might matter is through their word choices and the context of their words in these pronouncements.

The question, *"Do analysts matter?,"* has been explored before and has been answered in terms of the securities analysts' quantitative earnings forecasts and their effects on the capital markets. I investigated the discourse used in these earnings forecasts and other statements regarding the focal firm or industry in analyst reports. Therefore, I answered the question*, "Do analysts matter, as defined by their words used, and do they change investors' judgments about a firm's future prospects?"* The study employed content analysis of analysts' language to determine whether the words they use in their statements cause a response in the market. The study also investigated how the analysts' language differs based on their affiliations.

To examine this question, I drew on the efficient markets theory from finance. Data sources included the Chicago Centre for Research on Security Prices (CRSP) tapes and First Call analyst reports. The research applied quantitative computer text analysis, the event study methodology, and regression to test the hypotheses.

By studying statements from the All-American Team analysts, the present work shows that investors do consider the pronouncement of analyst statements significant. The results demonstrate support for the idea that analyst statements have an impact on the stock market. Moreover, the statement characteristics have an incremental effect on the market response. The key findings illustrate that words in the analysts' report matter. The analyst characteristics were instrumental in deciding the words that the analysts use in their reports. Finally, analysts use words to signal information to investors when they are pressured from investment banking relationships.

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CHAPTER 1

INTRODUCTION

Background

When Jack Grubman first encountered estimating firms' earnings as a fledgling telecommunications analyst at PaineWebber, times were simpler than they later became. No blast fax messages from firms were sent. No conference calls to discuss quarterly numbers with analysts, investors, and journalists were made. E-mail, the Internet, and CNBC did not exist. "You had to call up the firm, and then you could spend three days regurgitating what was in the press release," recalls Grubman about the earlier period (Anonymous, 1999a: 103). He was speaking of conditions in 1982.

Now, chief executive officers (CEOs) give national television interviews minutes after major news items are released. Hard news and bawdy rumors about firms abound on the web. Media-trained talking heads and money managers fill the airwaves around the clock with their commentary on the most obscure news outlets. The market has increasingly come to rely on analysts to wade through and interpret the volumes of information available about the market. "There's now a research component in almost every aspect of Wall Street's business," says Greg Ostroff, co-chief operating officer of investment research at Goldman, Sachs & Co. "It's gone from being 'nice to have' to being vitally important".(Anonymous, 1999a: 103).

Reshaping the securities analyst's job are forces increasingly familiar to all businesses today: technology, globalization, consolidation, and convergence. These

forces are completely revamping the firms that analysts cover as well as the ones for which they work. Cross-national and cross-industry enterprises are becoming more of a norm. Another factor in this melee is the unprecedented demands that analysts face from the banking side of the securities business. Record merger, spin-off, and corporate-finance activities mean more road shows (proposal trips), beauty contests (competitions), and pitch books (capabilities material) than ever before. And, deals like the DaimlerBenz–Chrysler Corp. or Citicorp–Travelers Group mergers make transaction analyses more difficult, because the deals are increasingly global and cross-industrial. "There's an incredible demand for information from analysts," says Alfred Jackson, managing director and head of global research at Credit Suisse First Boston (Anonymous, 1999a: 103-104). Analysts must manage these heightened responsibilities under a spotlight of extraordinary brightness. The most famous analysts are celebrities, but all research professionals play to a much larger audience than ever before. Bad calls are harder to hide; good calls, when stocks rise or fall sharply, can become stunning media events. In short, analysts' research and opinions are more important to investors than at any previous time. Analysts' messages, written and spoken, carry more weight and generate more interest than they did even 10 years ago. Given investors' unprecedented interest in analysts' opinions, I am interested in the effect of analysts—specifically, the effect of their words—on shareholder wealth.

To research the effect of analysts' messages on securities, I will make use of the theoretical literature in finance that deals with efficient markets. My hypothesis is that securities analysts' discourse—their words both written and oral—is correlated with investors' revision of their judgments about a firm's future prospects. This hypothesis

holds that the effect of analysts' discourse is that stock prices and shareholder wealth may be affected when investors, relying on an analyst's words in a statement, anticipate a change in the future performance of the firm and behave according to that anticipation.

The next section of this chapter describes the analysts. Then, I discuss the motivation for this dissertation. After that, I explain key terms used in this study. The chapter concludes with a general overview of the dissertation.

Who Are Analysts?

Every year, top graduates of MBA programs are hired as securities analysts. Securities analysts work in research departments of brokerage companies or investment banks. The analysts focus on gathering and analyzing information about firms or stocks. They report on businesses or stock offerings, provide information for mergers and acquisitions, and evaluate firms' financial soundness (please see Figure 1 for an example report). Usually, analysts are members of the Financial Analysts' Federation, a professional body governing their standards and behavior (Friedson, 1986). The Financial Analysts' Federation issues the title "certified financial analyst" to analysts who pass qualifying exams and sign a code of ethics. This code is the major industry standard governing analysts' conduct, and states, inter alia, that:

> "The financial analyst, in relationships with an issuer of securities . . . shall use particular care and good judgment to achieve and maintain independence and objectivity; and (2) The financial analyst, when making investment ratings, or taking investment actions, shall disclose to his clients any material conflict of interest relating to him . . ., which could reasonably be expected to impair his

ability to render unbiased and objective advice." (reprinted in Morley, 1988, p. 12)

** Insert Figure 1 here **

In conducting research about a firm, analysts use financial reports such as annual reports, make site visits, and interview management personnel regarding firm prospects. Analysts research the firm's history, management, products, markets, financing, past earnings, and future earnings potential. The output is often a report or a presentation to investors or money managers that highlights the analysis of the firms' prospects and makes a recommendation for the company's brokers or customers. The recommendation is generally to buy, hold, or sell the stocks detailed in the report or presentation. Many institutional investors rely on the earnings forecast and stock recommendations provided by the securities analyst community. Experienced analysts are also involved in investment banking deals or stock offerings. In these situations, they work as part of a team to prepare registration statements that are filed with the Securities and Exchange Commission.

The typical responsibility of an analyst is to follow 10 to 20 stocks in a given industry or economic sector. Analysts are primarily categorized as either buy-side or sell-side. The ultimate product of a sell-side financial analysis is a report evaluating a firm's securities. Although both sell-side and buy-side analysts make recommendations about which stocks to buy, sell, or hold, sell-side analysts are the primary producers of earnings forecasts. Buy-side analysts tend to be employed by money management companies or

institutional investors, whereas sell-side analysts tend to be employed at broker/dealer companies that serve individual and institutional investors. Buy-side analysts' recommendations to buy stock can be executed immediately as part of a planned investment strategy. Examples of buy-side analysts are analysts from institutional investors and mutual fund companies such as Fidelity Investments, T. Rowe Price Group, Vanguard Group, and Putnam Investments. Sell-side analysts' recommendations involve placing stocks on a "buy" list, disseminating written reports, and making recommendations to their clients. Examples of sell-side analysts are analysts from investment banking companies such as Citigroup Smith Barney, Goldman Sachs, Bank of America Merrill Lynch, and J. P. Morgan. In my dissertation, I will explore the recommendation differences driven by the type of analyst writing the report.

Rationale and Importance of the Dissertation

In a market in which intermediaries—that is, those who interface between the buyers and the sellers—command significant influence, sellers concentrate on courting the intermediaries' opinions (Hirsch, 1972) such that the market, in effect, links sellers and intermediaries, rather than sellers and buyers. In the stock market, securities analysts play this intermediary role (Burk, 1988). There is controversy in the literature, however (e.g., Barker, 1998; Branson, Guffey, and Pagach, 1998), about the importance of the securities analyst's intermediary role in the stock market.

Researchers have noted that organizational stakeholders exert a strong influence on analysts. For example, analysts whose employers are affiliated with a firm through underwriting relationships issue more favorable research reports than unaffiliated

analysts do (Lin and McNichols, 1998). Lin and McNichols found that stakeholder pressure was associated with analysts changing their recommendation to "hold," when "sell" was warranted. Schipper (1991) suggests that because buy-side and sell-side analysts work for different types of companies, their incentives probably differ. The employer's influence on the analyst leads to a different recommendation from the analyst, which in turn changes the investment community's interpretation of the analyst's statements regarding a firm's future prospects. I draw on such organizational stakeholder ideas for setting up my hypotheses.

This dissertation's practical relevance is underscored by the important role analysts play in the market as sources of information, mechanisms of information efficiency, and providers of benchmarks for consensus valuation (Barker, 1998). In the 1980s, stock price was a reflection of a firm's earnings forecast. Currently, the stock price, in part, is derived from analysts' estimates (Portnoy and Jastrow, 1999). This means that the market's perceptions of analysts' statements are becoming increasingly more important (McGinnis, 2002).

The majority of the previous research into the overall consequences of analysts' forecasts, and the effect of their statements on the stock market in particular, has not paid attention to the words in the statements. As several researchers have shown, not all numerical forecasts for a given firm carry the same weight in the stock market—even if they forecast the same numbers (e.g., Hayward and Boeker, 1998). The market reaction varies based on the rationales offered for the numerical forecast. Interestingly, however, research on analysts' forecasts generally has not gone beyond the familiar quantitative numbers such as earnings forecasts. Ho and Harris state that "the significant differences

in the magnitude and timing of pricing responses to various statements suggest opportunities for improved use of analysts' statements in both empirical research and in constructing investment strategies" (2000, p. 466). Research concentrating on quantitative data in analysts' statements may be less useful and not fully applicable in understanding the stock market reaction. An inclusion of the words surrounding the analyst statement would enable more of an insight into the consequences of the analyst statement. I propose that past results are equivocal due to omission of variables that would describe analysts' statements more fully. In this regard, in studies of the research and development disclosure environment (Entwistle, 1999) and corporate performance (Bettman and Weitz, 1983), researchers have suggested the inclusion of content analysis in future studies. Echoing the need for a more complete scrutiny of analysts' forecasts, Rogers and Grant (1997) specifically suggested the inclusion of content analysis in the study of analyst reports.

The variations in types of analyst statements and their effects on the market provide detailed insights into the subtle interactions between the analysts and the market. Researchers Ho and Harris (2000) examined the full text of analysts' research reports to characterize the explanations analysts provide for their recommendation changes. Documenting the rationales allowed a perspective into what information analysts provide in making their recommendations and whether these rationales differ in positive (upgrades) versus negative (downgrades) investment advice. Ho and Harris looked at price responses to different rationales provided to investors, paying special attention to whether the market reacted more when the analyst presented new information on the underlying firm (e.g., revisions in earnings forecasts) as opposed to citing only already

publicly available information on changes in share price. Market participants apparently paid attention to the words behind analysts' investment advice. Price responses suggested that investors placed a higher value on explicit fundamental information (new information) provided by analysts rather than the price-basis recommendations. The largest price reactions were to recommendation changes supported by an analyst's revised earnings forecast (again, new information). For instance, downgrades supported by earnings forecast revisions engendered significantly more pronounced (negative) price responses than downgrades explained by general business factors or recent share price movements (public information). Despite the larger price reactions to explicit fundamental information, price responses were significant even when the rationale for the rating change was recent movement in the share price with no stated change in the assessment of firm fundamentals. Such price-basis changes may indirectly reveal analysts' fundamental information and suggest analysts play roles of both information collector and information interpreter.

In addition, one possible explanation for the equivocal results of studies of the effects of analyst statements on shareholder wealth (e.g., Barker, 1998; Branson, Guffey, and Pagach, 1998, and many others that will be examined in the Literature Review Section in more detail) is that they failed to consider adequately the words, and the words' context, of the statements that were studied. Therefore, word analysis represents an omitted variable in the body of research done to date. This study will consider a more complete content analysis of analysts' pronouncements than was done in previous studies.

In the next section, I define key concepts for understanding the literature reviewed in subsequent chapters.

Key Concepts

The key concepts used in this study are listed and briefly described below: *market efficiency*, *abnormal* or *excess returns*, and *content analysis* of analysts' statements.

Market efficiency refers to the proposal that "prices fully reflect available information" (Fama, 1970: 383) and is articulated in the Efficient Markets Hypothesis (EMH). However, when investors have new information, which causes them to revise their expectations about the future of a firm, changes in prices can occur. In summary, the stock price at any time fully reflects investors' expectations about the future of the firm.

Abnormal or *excess returns* is the difference between an observed return and an expected return. The observed return is the actual change in the price of a stock over some time interval. The expected return is the change for the stock that would be expected over the same time interval due to the general market change. I will use abnormal or excess returns as the measure of changes in investors' expectations as a consequence of the analyst statements.

"*Content analysis* may be described as the systematic, objective, quantitative analysis of message characteristics" (Neuendorf, 2002, p. 14). It includes careful examination of the quantitative investigation of word usage in newspapers, reports, TV programs, and the like. The past few years have seen a rapid advancement in computer-text content analysis software, with a corresponding proliferation of online archives and

databases (Evans, 1996). I will use content analysis to study word usage in analysts' statements in reports and media interviews.

Key Definitions

For the sake of clarity throughout the dissertation, *company*, and *firm* are used in a specific manner.

Company refers to the analyst's employer, and

Firm refers to the entity that the analyst evaluates.

Summary

In the foregoing, the key assertion is that we can better understand when and how securities analysts matter in the stock market by looking at how investors react to the actual words analysts use in statements. One way that an analyst's statement might matter is that it might influence investors' expectations for the future performance of the firm. Content analysis provides a proficient and theoretically feasible way to describe these statements and evaluate the dissimilarities among them.

The outline of the rest of the dissertation is as follows. In Chapter 2 of this dissertation, I cover the literature that is relevant to the argument advanced above, pose research questions, and develop hypotheses that will be tested. In Chapter 3, I focus on the methodology that will be used. In Chapter 4, I go through the results. In the final chapter, Chapter 5, I lay out the limitations of this work and directions for future research.

CHAPTER 2

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

This study proposes that analysts' statements and characteristics provide signals to the stock market. These signals may be important because investors and stock prices may react to analysts' statements and characteristics on the basis of the words used in those statements. Shareholder wealth may change when investors expect a change in the prospects of a firm based on the analyst characteristics and the words used by the analyst in a statement. The goal in this chapter is to review the literature leading to this argument and to develop research questions and hypotheses regarding the analyst characteristics, and the antecedents and the effects of such analyst statements.

Before delving into the literature regarding analyst statements and characteristics, I examine the efficient markets theory and its relevance in this study. Another central issue is the question of "Do analysts matter?" I will also respond to that question and go through the literature surrounding it.

Previous research has considered the effects of analysts' forecasts on stock market reactions. Researchers have found both large stock price reactions to analysts' coverage (Branson, Guffey, and Pagach, 1998) and no abnormal price reactions (Bidwell, 1977; Diefenbach, 1972; Logue and Tuttle, 1973). Moreover, two characteristics of analysts' statements, the quantitative forecast itself and the one-word recommendation *buy*, *outperform*, *hold*, or *sell*, have been scrutinized to a large degree. However, other statement characteristics, such as the words in the analyst reports, have received negligible attention. There are both analyst-focused and investor-focused reasons, which I

will cover in later sections, why such analyst statement characteristics may help mold the nature of the market reaction.

Now, the stock market is viewed as an efficient market wherein all new information is instantaneously reflected in stock prices. In such an environment, how is the information in analysts' statements—the forecast numbers and the words surrounding the numbers—assessed by the investors. Before addressing this question, I will briefly review efficient markets and the influence of analysts in such markets.

Efficient Markets

The efficient markets hypothesis (Fama, 1970, 1991) asserts that stock prices fully reflect all information about a firm. In addition, if there is new information, investors quickly react to the new information and re-price the stock. If there are unexpected returns, it means that there is some information that has changed investors' prospects about the future of the firm.

Although the efficient markets hypothesis has been strongly supported in the last four decades, there have been periodic challenges. DeBondt and Thaler (1985), among other researchers, have raised questions about the validity of the efficient markets hypothesis. The main points of contention relate to excessive reactions of markets by amplifying events, reactions to extraneous information, and long-term inconsistencies. Chan (1988), Ball and Kothari (1989), and Zarowin (1989) have varying explanations for the DeBondt and Thaler (1985) results. Fama (1998) comprehensively countered the challenges to the efficient markets hypothesis. As far the excessive reactions of markets, Fama showed an even split between apparent overreaction and underreaction anomalies.

Also, Fama found that the long-term return inconsistencies are sensitive to methodology and tend to become marginal or disappear when exposed to different models for expected (normal) returns or when different statistical approaches are used to measure them. In summary, Fama showed that even when viewed one-by-one, most long-term inconsistencies could be reasonably attributed to chance.

Researchers (Schleifer, 2000) offer a behavioral explanation as an alternative to efficient markets. This view suggests that investors' response at any given moment may be driven by psychology much more than driven by the value of the firm. Now, if there is a response to an analyst's statement, measured by unexpected returns, that would suggest a change in investors' expectations about future performance. For the efficient-markets proponent, the explanation for the investors' response is that investors are rational and that any under- or over-reaction is due to the anomalies encountered in event studies (Fama, 1998). In contrast, for the behavioral finance advocate, the under- or over-reaction is due to investors' underlying behavior in terms of how a problem is framed by the investors (Schleifer, 2000). This dissertation looks at investors' response, irrespective of whether it is driven by psychology or by the perceived value of the firm.

Given the above background of efficient markets, the next question to address is: Do analysts matter? If they do matter, how do they matter?

Do Analysts Matter?

Analysts are among the most visible individuals in the stock market. In the stock market milieu, investors have a difficult time assessing firm prospects, especially because the relationships between firm actions and firm performance are uncertain. Analysts help

provide explanations for firm outcomes, some of which can pay off practically. As an example, in a study of over 1,500 recommendations over a three-year period, Womack (1996) reported that a *buy* recommendation by an analyst could increase a stock price by 2.4 percent, whereas a *sell* recommendation could reduce it by 9.1 percent.

Academic researchers have differing outlooks on whether analysts matter. On the one hand, researchers have noted that firms that analysts follow lightly, experience larger stock price reactions to announcements of analyst coverage initiation than either previously covered firms or more heavily followed ones (Branson, Guffey, and Pagach, 1998). These authors examined the response of the securities market to the announcement of sell-side analysts' decisions to initiate coverage of a firm. The market reaction to the initiation announcement and the accompanying investment recommendation were studied by disaggregating the sample based on existing analyst coverage at the announcement date. Analyses suggested that, on average, there was a significantly larger, positive stock price reaction to *buy* recommendations conveyed in announcements of coverage initiation for firms with a small existing analyst following as compared to such announcements for firms receiving no prior analyst coverage. All of this suggests that analysts matter in the stock market.

On the other hand, results from other studies have inferred that analysts have a limited or nonexistent role in the stock market. For example, Barker (1998) found that information from annual reports is more important to price determination than what analysts say about the firms. Barker studied an important question for accounting research: Does there exist an equilibrium mechanism whereby fund managers' investment decisions can be fully informed? He approached this question by developing a grounded

theory of the market for information. The evidence suggested a two-part theory. It was argued that raw data flowing directly from firms were considerably more important to fund managers than processed data generated by analysts. However, it was argued that analysts play some role in the market for information—as both mechanisms of information efficiency and providers of benchmarks for consensus valuation. Barker's theory implied that the research literature has paid insufficient attention to the role of accounting information in direct communication between firms and fund managers and, related to this, that the role of analysts in share price determination has been overstated and only superficially understood.

Bernstein (1998) goes so far as to question the role of securities analysts in a world of computers, efficient markets, and increasingly sophisticated measurement tools. His contention is that most analysts are doing what they have always done: massaging familiar data, making heroic efforts to explain why the results of the latest quarter differ from their forecast, and attempting to make an earnings forecast for the next four quarters that will necessitate a minimum amount of explanation afterwards. The abundance of sophisticated information available to portfolio managers and individual investors renders the bulk of analysts' work duplicative. Bernstein suggests that "analysts' tasks must be restructured, or analysts must be disposed of altogether" (1998, p. 4).

Beginning with Cowles's (1933) well-known study "Can Stock Market Forecasters Forecast?," researchers have periodically questioned whether analysts matter in the stock market. Scholars, such as Bidwell (1977), Diefenbach (1972), Logue and Tuttle (1973), have found that the recommendations of most analysts do not produce abnormal returns: that is, analysts do not matter as far as the value of their

recommendations. Criticisms of sample bias or imprecise data do lessen the impact of the "analysts do not matter" findings (Bjerring, Lakonishok, and Vermaelen, 1983; Dimson and Marsh, 1984; Elton, Gruber, and Grossman, 1986; Groth, Lewellen, Schlarbaum, and Lease, 1979).

It is true that brokerage companies make enormous investments in collecting, analyzing, and publishing research and recommendations (Womack, 1996). Moreover, anecdotal evidence (e.g., Portnoy and Jastrow, 1999) suggests that analysts' pronouncements can affect organizations and perceptions about them. One example of this is the 12 percent jump in the price of the Razorfish stock after an analyst at Volpe, Brown, Whelan and Company began to cover Razorfish. Several researchers cite analyst coverage as an important component of firms' information environments. For example, Shores (1990) studied the preemption of annual earnings surprises by interim disclosures. He found that the analyst following (the number of analysts following a stock) is a proxy for the level of interim information available about the firm. Bhushan (1989) equated analyst following with the economy-wide amount of information gathering in his model of disclosures. All the above indicates that when analysts follow firms, there is an increased amount of information available to investors in the stock market. Moreover, proponents of the "analysts matter" viewpoint suggest that analysts' access to unique information allows them to gain or sustain a competitive advantage (Williams, Moyes, and Park, 1996). And top analysts have been cited as the differentiating factor in companies identified as the most admired (Stickel, 1992). Schipper (1991) and Francis and Philbrick (1993) point out that accounting scholars expend great energy analyzing the earnings and cash flow forecasts of analysts, even though producing earnings forecasts is

secondary to analysts' main objective of making timely stock recommendations. *Buy* and *sell* recommendations follow from predictions of stock values using all available sources of industry and firm-specific information; therefore, the predictions offer a direct test of the ability of well-informed market participants to outperform stock market averages (Womack, 1996).

There is also empirical evidence that suggests analysts' forecasts matter in the stock market. Womack (1996) argues that stock recommendations embody valuable information for which the brokerage company should be compensated. The written reports of securities analysts are followed closely by news, business, financial, and professional publications and were the most frequently cited sources of non-firm communication in several studies (Anonymous, 1999a; Latane and Tuttle, 1970; McGinnis, 2002). Givoly and Lakonishok (1984) researched the quality of financial analysts' forecasts of earnings and their value to investors. They compared analysts' forecasts and mechanical prediction models in the formulation of profitable investment strategies and found that the analysts' forecasts predicted earnings more accurately than mechanical prediction models. Their study evaluated the effectiveness of analysts' forecasts as surrogates for the market's expectation of earnings and compared it with that of prediction models commonly used in research. Results indicated that analysts' prediction errors are more closely associated with security price movements, suggesting that analysts' forecasts provide a better surrogate for market expectations than forecasts generated by computer generated time-series models. The study also identified factors that might contribute to the performance of the financial analysts' forecasts: the broadness

of the information set employed by analysts and, to a lesser extent, their reliance on information released after the end of the fiscal year.

It is possible that the determination of whether analysts matter depends on the constraints under which those analysts work. Some researchers have viewed analysts as constrained by their environment in many ways. For example, analysts' incentives and strategic concerns can influence their forecasts and can cause the analysts to issue biased recommendations (e.g., Dugar and Nathan, 1995; McNichols and O'Brien, 1997). Womack (1996) found that *buy* recommendations occur seven times more often than sell recommendations, suggesting that brokers are reluctant to issue sell recommendations because the costs of issuing these recommendations are greater than the costs of issuing *buy* recommendations. Pratt (1993) describes these costs: (1) sell recommendations can harm a brokerage company's present and potential investment banking relationships and thus are discouraged by the company's investment bankers, and (2) top management and investment contacts may limit or cut off the flow of information if an analyst issues unfavorable ratings. Veit and Murphy (1996) investigated the responses of securities analysts to a mail survey about their own ethical behavior and the ethical behavior of people with whom they work. They discovered that the pressures from environmental constraints led to criminal conduct in some situations. The researchers found that 16 percent of the respondents acknowledged writing reports with predetermined conclusions frequently, and an astonishing 40 percent indicated writing reports with predetermined conclusions periodically. This particular environmental constraint emanates from senior management pressure—29 percent of the analysts had been asked by a senior manager to do something considered unethical.

However, there has been work that shows that there are very limited amounts of environmental constraints on analysts. Researchers (e.g., Barron and Stuerke, 1998; Daley, Senkow, and Vigeland, 1988; Imhoff and Lobo, 1992; Lang and Lundholm, 1996; Ziebart, 1990) have found large variance in analysts' forecasts. These researchers have used the forecast as a measure for the degree of lack of consensus among analysts. This lack of consensus seen by some researchers implies that analysts sometimes have very modest constraints.

Much of the discourse up until now has dealt with the question of whether analysts matter. Investors' reactions to the analysts' statements lead one to believe that investors do indeed think that analysts matter in the stock market. The next level of inquiry that comes up is: When and how do they matter? Further, specifically how do investors respond to different analysts? In the following section, I go through the differences in analysts, as evidenced by the analyst characteristics, and then explore reasons as to why analyst characteristics should be studied and the effect of the analyst characteristics in the stock market.

Analyst Characteristics

Analyst characteristics have been defined by academic researchers (Brown, 2001; Clement and Tse, 2003a; Clement and Tse, 2005; Jacob, Lys, and Neale, 1999; Mikhail, Walther, and Willis, 1997) as analyst attributes that can be used to distinguish between more and less accurate stock forecasts. Prior research has found that analysts' stock forecasts are related to several analyst characteristics such as forecast frequency, broker

size, the number of firms and industries that the analyst follows, the analyst's general and firm-specific experience, and past accuracy.

Lieberman and Asaba (2006) and Sinha, Brown, and Das (1997) show that there are differences among analysts, and that there are desirable characteristics of analysts. For example, Mikhail, Walther, and Willis (1997) recognized analyst experience as a desirable analyst characteristic. Clement (1999) found evidence of experience plus number of firms followed, number of industries followed, and size of brokerage house among the set of desirable characteristics. Jacob, Lys, and Neale (1999) validated forecast frequency as a desirable analyst characteristic.

Academic researchers have identified specific intuitively appealing analyst characteristics (covered below) that enable investors to distinguish between superior-performing and inferior-performing analysts.

Number of firms and industries covered

The number of firms and industries covered by an analyst is simply the number of firms and industries that the analyst follows in the stock market. Clement (1999) utilizes the number of firms and industries that the analyst follows as a proxy for the analyst task complexity. Jacob, Lys, and Neale (1999) and Clement (1999) find that the analysts' performance is worse when they follow more firms and industries when compared to the performance of other analysts that follow fewer firms and industries.

Analyst experience

The analyst experience can be classified as general experience, namely the analyst's experience as an analyst, and firm-specific experience, which would be the experience that the analyst has covering a specific firm. Mikhail, Walther, and Willis

(1997) and Clement (1999) identify analyst experience as an important analyst characteristic. Clement (1999) uses the analyst's firm-specific and general experience as a proxy for ability. Mikhail, Walther, and Willis (1997) posit that analysts "learn-by-doing," and demonstrate that analysts with longer experience forecasting a particular firm produce more accurate forecasts. Sinha, Brown, and Das (1997) studied the performance of analysts over time and noted that analysts improve their performance with experience. Mikhail, Walther, and Willis (1997) and Jacob, Lys, and Neale (1999) find that analysts' performance improves when they gain firm-specific experience, but the researchers found no association for general experience. On the other hand, Clement (1999) finds that forecast accuracy increases with both firm-specific and general experience. Furthermore, Clement (1999) and Mikhail, Walther, and Willis (1997) (based on the results from one subsample) observed that analysts with the incremental firm-specific experience show superior performance as compared to incremental general experience.

Company size

The analyst's employer has been identified by researchers as an important characteristic. Clement (1999) utilizes company size as a proxy for resources for which an analyst has access. He finds that the analyst performance is explained by company size more so than by analyst experience. Clement (1999) proposes that analysts backed by better resources and those with greater experience will perform better, and that task complexity reduces their performance. He shows that analysts employed by larger brokerage houses, those with more focused experience, and those with less complex portfolios produce more accurate forecasts. Jacob, Lys, and Neale (1997) also document that analyst performance is positively associated with brokerage size. In addition, Hong

and Kubik (2003) find that better performing analysts move to a high-status (namely, large and prestigious) brokerage company. Moreover, they find that high-status companies are more likely than other companies to dismiss an analyst for poor performance.

Forecast frequency

Forecast frequency is defined as the number of forecasts the analyst makes regarding a firm in a time period. Jacob, Lys, and Neale (1999) demonstrate that forecast frequency is an important factor in explaining analyst performance. They used forecast frequency as a proxy for the amount of time the analyst devotes to following a firm. Jacob, Lys, and Neale (1999) predict that analysts who update more frequently will improve their performance, and find results consistent with that prediction. Jacob, Lys, and Neale (1999) also confirmed Clement's (1999) result that company size is more important than experience in explaining analyst performance. However, Jacob, Lys, and Neale (1999) find that forecast frequency was the most important analyst characteristic.

Prior forecast accuracy

Brown (2001) has extended prior studies by investigating how well all of the above-mentioned analyst characteristics, except forecast frequency, predict analyst performance. He finds that the analyst's past performance has greater predictive power than all of the other analyst characteristics combined. However, past accuracy is a noisy measure for determining analyst performance (Clement and Tse, 2003b). For example, able forecasters occasionally make a large error, and inept forecasters sometimes forecast accurately simply by chance

The next two sections cover analyst actions and investor assessments as they relate to analyst characteristics. The analyst-oriented research delves into what we can learn about analysts from the analyst characteristics and the relationship between analyst characteristics, behavior, and performance. The investor-oriented research explores the method through which investors assess analysts and their influence on the firms' stock.

Analyst Characteristics and Actions

Analyst characteristics may shed light on analysts' actions and their performance. The connections between analysts' characteristics, actions, and performance are due, in part, to the attributes of the analyst task. The tasks of analysts are marked by high uncertainty and variety (Francis and Philbrick, 1993). Analysts conduct complicated decision-making in a multifaceted environment. In such an environment, analysts are likely to depend on cognitive shortcuts and decision-making heuristics evolved from past practices (Hopkins, 2003).

Bonner (1999) found that an analyst's judgment and decision-making (JDM) skills are shaped partly by his or her characteristics. Having certain characteristics enables the analyst to notice and think through alternatives that others cannot, and consequently, performs well in his or her function. However, JDM skills of analysts are hard to compute in general. Individual investors and even professional investors are not apt to have information on these JDM skills. However, characteristics such as experience and others covered in the beginning of this section, can be used to deduce these skills. Researchers, like Birnberg and Shields (1989), have shown empirical relationships between analysts' JDM skills and analysts' characteristics. Thus, an analyst's possession

of specific characteristics may be considered by investors as a sign that the analyst will deliver better performance.

Investors' Assessments of Analyst Characteristics

In this section, I will cover the instantaneous effect on investors of analyst characteristics. To understand the effects of analyst characteristics, it is imperative to take into account the process by which the investors might measure such characteristics. Thus, it is essential to ascertain what investors will pay attention to, and why, and also how they will react to what they have observed. Investors face an unsure and multifaceted situation in the stock market while gauging an analyst. How do investors develop opinions, and what information do they utilize while considering the impact of the analyst? The reasoning that follows in the rest of this section proposes that with incomplete and unsure information, investors will defer to using easily accessible, easy-to-infer information.

In the financial economic literature, stock market reactions are viewed as providing hard numbers that reflect the true underlying value of a firm. In addition, in the financial economic literature, the stock price is considered to be derived from logical behavior and perfect information. However, in practice, the market operates quite differently. Prices in the stock market and reactions to events are the perceptions of a heterogeneous rational audience (Baker, 1984). The perceptions are based on information processing by individuals either superficially or systematically (Chaiken, Liberman, and Eagly, 1989). Individuals will exert whatever effort is required to attain a sufficient degree of confidence that they have accomplished their processing goals (Eagly and Chaiken, 1993). The individuals' processing goals can vary, and this variance influences

how the individuals go about obtaining the requisite information, superficially or systematically, to make their decisions (Eagly and Chaiken, 1993)

Stock market investors make their decisions by examining the available information provided by the analyst and arriving at their conclusions regarding the outlook for a firm under consideration. However, investors, including professionals, are likely to have limited background knowledge regarding the antecedents for the information provided by the analyst. Brown and Mohd (2003) have noted that even though many appealing attributes of individual analyst earnings forecast accuracy have been identified, there is no evidence regarding the predictive validity of these attributes. In such a situation in the market, investors will base their decisions on easily understandable and accessible information. Investors would likely rely on easily communicated information, such as analyst characteristics provided in accounts of analysts, when they do not have personal knowledge of an analyst for their investment decisions (Clement and Tse, 2003b).

Investors are stymied by limited attention, recall, and processing competencies when faced with the copious amounts of information streaming in the stock market (Shiller, 1999; Hirshleifer, 2001). In addition, the investors have to contend with incomplete information about an analyst and his or her abilities (Hopkins, 2003). Under such circumstances, investors are likely to base their decisions by relying on available information about the analyst. Analyst characteristics information about the top analysts is readily available in web sources and in other media reports. The available characteristics information enables the investors to form expectations about the performance of the stock.

We tend to categorize individuals based on prototypes (Rosch, 1978). Investors form their perceptions of analysts in terms of how the analysts match their own stereotypes and prototypes (Burk, 1988). Moreover, investors develop biases that are activated instantly by information about analyst characteristics, for example, employment in a high status company (Hong and Kubik, 2003).

Researchers (Gilbert and Hixon, 1991) have shown that perceptions are more driven by stereotypes when the resources for information processing are limited. When investors are faced with evaluating an analyst statement about a firm, they may use stereotypes about the analyst to determine the expected performance of that firm. The analyst stereotypes may be described by the analyst's characteristics. In addition, according to the efficient markets hypothesis, when new information from the analyst statement changes expectations about the future firm performance, then investors respond with stock price changes. If the investors utilize analyst characteristics to form their expectations of future firm performance, then the firm stock price response, in part, will be determined by the analyst characteristics when the analyst delivers the report.

A follow-up research question pertains to whether certain analyst characteristics elicit a positive or negative response in the firm stock. Are the investors looking for or responding to a preferred set of analyst characteristics? If there is more of a match with the preferred analyst characteristics, the investors would have more of a favorable view of what the analyst is reporting.

This dissertation proposes that the stock market will respond favorably to an analyst who fits a general prototype that contains desirable characteristics. When analyst characteristics match the desired profile and that analyst recommends a stock, there will

be a positive reaction from the investors. The upward stock movement is from a positive reconsideration of firm expectations by the market participants, and the investors' actions would lead to a positive change in a firm's stock price.

The previous sections covered the subject of efficient markets. Also, the sections covered the questions of *if*, *when***,** and *how* analysts matter. Arguments presented above suggest that the characteristics of analysts are an important way in which they are different and that investors may be influenced by such characteristics. In addition, an analyst statement also allows us to assess the impact of analysts by looking at the analyst statement's consequences. While other researchers have considered the consequences of analyst statements on shareholder wealth, such research has taken a limited view of how the analyst statements are different. In the section that follows, I will go into more details and explore how analyst statements might differ and how investors might react to such differences.

Analysts' Statements

Analysts' statements, in the form of reports, present an opportunity to research the effects of analysts. Although, there has been much attention directed towards analysts' statements resulting in hundreds of research papers, there is much that is not known and that has not yet been studied (Ghosh and Whitecotton, 1997). This dissertation focuses on how analysts' statements affect the immediate changes in a firm's stock price when the analyst statement is issued. There has been work done in that particular topic, the consequences of analysts' statements, which will be covered below. During the topic

discussion, some holes will be identified that this dissertation will explore. However, before doing that, a general review of the studies on the consequences of analysts' statements is conducted below.

Analysts' statements are key because of the real and the perceived importance of the analyst (Williams, Moyes, and Park, 1996). The analyst is the evaluator who provides guidance on a firm's earnings expectations and is held answerable to investors (Britt, 2002; Palepu, 1990). The analyst's statement is often what the public views as the assessed firm's position in the market (Jensen and Meckling, 1976; Moyer, Chatfield, and Sisneros, 1989). In addition, a change in the recommendation by an analyst is an occurrence that generates anxiety for firm employees (Jorge and Rees, 2000) and for outside parties as well (Womack, 1996). The analyst's statement often transmits information regarding the prospective course of the firm (for example, Anonymous, 2002).

Research on analysts' statement consequences has been done from three standpoints. The first standpoint proposes that the analyst statements have a beneficial influence on the firm because they help motivate the firm's managers (Chung and Jo, 1996). The second standpoint proposes that the interruptions caused by analysts' statements have an adverse impact on firm functioning (Lin and McNichols, 1998; Williams, Moyes, and Park, 1996). The third standpoint proposes that analysts' statements have no influence (Colker, 1963; Diefenback, 1972; Logue and Tuttle, 1973) on the firm, and that any connection between the analyst statement and the firm performance is simply coincidental (Anonymous, 1999b).

Given the hundreds of studies on analyst statement consequences, there is backing for all three standpoints. As an example, analysts' statements were found to have a beneficial influence on the firm when the objectives of the analysts and the firms were aligned (Jensen and Meckling, 1976). Analysts have been found to mitigate agency conflict—conflict that arises due to misaligned objectives among the stakeholders of a firm. For example, Wright and Ferris (1997) have found that in some situations, senior executives adopt corporate strategies in response to political pressures even if these strategies may be costly to shareholders. They found that noneconomic pressures may influence managerial strategies perversely. In such cases, the analyst can have a beneficial influence on firm functioning by reducing the level of agency conflict between the firm's shareholders and management. The beneficial influence is because the analyst provides a monitoring function similar to a board of directors (Fama, 1980), or a bond-rating entity (Fama and Jensen, 1985). Chung and Jo (1996) report a positive and significant correlation between firm quality and the number of analysts following the firm. This evidence is consistent with the benefit of analysts serving as independent monitors.

In contrast, Lin and McNichols (1998), Bradshaw, Richardson, and Sloan (2003), Dechow, Hutton, and Sloan (2000), and Michaely and Womack (1999) among others found a strong negative effect for analysts' statements on organizations. By issuing biased recommendations, the analysts affected organizations' performance negatively. For example, Lin and McNichols (1998) and Eccles and Crane (1988) examined the effect of underwriting relationships (relationships between the firms that analysts evaluate and the analysts' employers) on analysts' recommendations. They found that the

affiliated analysts' recommendations were significantly more favorable than those made by unaffiliated analysts, although the underlying earnings forecasts did not justify such bias. Affiliated analysts are analysts whose companies have investment banking relationships with the evaluated firms. Unaffiliated analysts are ones with no relationships between their company and evaluated firms.

Finally, support for the standpoint that analysts' statements do not matter has also been found (example, Anonymous, 1999b). The Walker Information Global Network survey reported that financial analysts came in last when business executives worldwide were asked to prioritize their stakeholders' importance. The survey spanned 26 countries over a seven-month period during 1998 and 1999 and canvassed more than one thousand multimillion-dollar firms worldwide.

The differing conclusions from the studies above note that analyst statements sometimes do have influence, but when and how remain unclear.

Initial research on stock market responses to analysts' statements concentrated on the announcement of the statements themselves. Cowles (1933) saw no significant effect on stock prices as a result of the analyst statements themselves. Colker (1963), Diefenback (1972), and Logue and Tuttle (1973) confirmed this result. However, Davies and Canes (1978) noted that there is significant average abnormal stock-price performance due to the publication of analysts' recommendations. Their study has received support from empirical studies by Groth, Lewellen, Schlarbaum, and Lease (1979), Copeland and Mayers (1982), and Bjerring, Lakonishok, and Vermaelen (1983).

Ambiguous results in research driven by these standpoints on analyst statements, and which rely on stock market response to measure their effect, suggest that answering

the "when and how" questions require the addition of contingent factors (Bjerring, Lakonishok, and Vermaelen, 1983). Contingent factors could be the words in the analyst statement in addition to the sole focus on the numerical forecast. Some study (Ferreira and Smith, 2003) has been done in this area, in response to calls for additional research addressing the hypothesis that "the words behind the investment advice matter" (Ho and Harris, 2000, p. 466). Up until now, investigators have given hardly any consideration to the words in a statement, especially the words' characteristics, when attempting to evaluate the influence of an analyst's statement.

Hitherto, the main advance in the analyst statement research involving the study of word characteristics has been to consider the one-word recommendation in the analyst report, e.g., *sell*, *hold, outperform*, or *buy*. It would seem that the stock market reaction to an analyst statement is not easily accounted for solely as a reaction to the one-word recommendation. To advance a full model of the reactions to analysts' statements, researchers must consider variables that previously have been ignored (Ho and Harris, 2000). One overlooked area where work remains to be done is in looking at the words in an analyst's statement: the word characteristics in the reports. I suggest that past results are equivocal due to omission of variables that would describe analysts' statements more fully.

One paper has considered content analysis of analysts' reports: namely**,** the analysis words surrounding the numerical forecasts (Ho and Harris, 2000). These researchers derived the broad rationales for the analysts' recommendations from the report and used these rationales as the variables. Their findings show that the language used in justifying an upgrade is likely to cite general business prospects, whereas the

language in referring to a downgrade is accompanied by a forecast of reduced earnings. My research will move beyond prior work by looking at a fuller characterization than this paper does. In the next section, I go into details of additional word characteristics in analyst statements and the influence of those statement characteristics in the stock market.

Statement Characteristics

As described above, most of the research that has looked at the impact of analysts' statements on the stock market has utilized either the quantitative forecast number or the one-word recommendation to capture the characteristics of a statement by an analyst. However, analysts' statements vary from each other on more measures than just these two (Breton and Taffler, 2001; Entwistle, 1999; Previts, Bricker, Robinson, and Young, 1994; Rogers and Grant, 1997). To improve our comprehension of how analysts' statements might vary and when and how these variances might be important, it is essential to study a fuller characterization of analyst statements.

The enhanced description I propose includes additional word characteristics, such as optimism, pessimism, activity, certainty, uncertainty, realism, and commonality. There are two main motivations for researchers to study these analysts' statement. The first reason is analyst-centered and has to do with what we can understand about analysts from these characteristics and the connections between statement characteristics, analysts' actions, and analyst performance. The second reason is investor-centered and has to do with understanding how investors might evaluate analyst statements and the influence of the analyst statements on firm performance.

Statement Characteristics and Analyst Actions

One of the concepts in this dissertation on analysts' statements is that the complexity of the firm-evaluation task and the analyst's decision-making process allows us to draw inferences about analysts' actions from statement characteristics. Traditional research has assumed that financial analysts are rational experts in the market for information (Kahn and Rudd, 1999). This view presumes that analysts incorporate new information immediately and in an unbiased manner. However, several studies have reported inefficiencies and/or biases on the part of analysts in incorporating new information into their statements (Abarbanell and Bernard, 1992; Mendenhall, 1991; Teoh and Wong, 2002). For example, Hunton, McEwen, and Bhattacharjee (2001) found a propensity among analysts to engage in risky choice behavior and several studies have suggested that motivational incentives at analysts' companies can influence forecast accuracy and lead analysts to issue biased statements (Abarbanell and Bernard, 1992; Dugar and Nathan, 1995; Hunton and McEwen, 1997; Schipper, 1991).

Researchers have emphasized statement characteristics, in part, because of the difficulties in measuring attitudes, behaviors, and decision-making processes, especially among analysts. Statement characteristics (such as optimism, uncertainty, activity, realism, and commonality) are defined as features in a statement that help to distinguish one statement from another. Differences in bias, optimism, or other statement characteristics provide indicators of differences in analysts' choices (Dugar and Nathan, 1995; Francis and Philbrick, 1993; Hunton and McEwen, 1997; Kahn and Rudd, 1999; Lin and McNichols, 1998; Schipper, 1991).

Statement characteristics may provide hints about analysts' biases because analysts have a range of word choices available for use in their statements. Further, the presence of certain statement characteristics may be looked upon as a signal of analyst intent, which in turn may influence market participants' expectations regarding the evaluated firm's future performance based on the characteristics in the analyst statement.

Investors' Assessments of Analyst Statement Characteristics

In this Section, I look at the instantaneous effect of the characteristics of the words in a statement by an analyst on the securities market. Stock market prices and responses to events are not rational, nor are they entirely irrational. The market consists of a diverse set of participants that are purposeful but constrained (Westphal and Zajac, 1998) who arrive at their outlook for the future based on their analyses of existing information. Specifically, where a statement by an analyst is concerned, the market participants are likely to have limited knowledge and likely lean on quickly accessible data that they can comprehend effortlessly. The market participants are likely to have confidence in simple, socially imparted information, such as can be communicated by the characteristics of the words used in a statement by an analyst, because they do not know the analyst personally (Beneish, 1991; Ho and Harris, 2000).

To deal with partial information about a statement by an analyst (Ho and Harris, 1998), market participants may make decisions, at least in part, based on the analyst's statement. Why? First, because market participants are restricted in their capabilities due to their limited concentration, comprehension, and recall competencies (Hirshleifer, 2001; Shiller, 1999). Second, because the words in an analyst's statement are easily

available and regularly highlighted through the ubiquitous media outlets. In fact on the day a statement is issued, the characteristics of such words may be the only information the market participants have.

Analysts' statements allow us to measure the influence of analysts by looking at the consequences of their statements. Prior research has delved into the influence of analysts' statements on the market. However, the extant research has primarily looked at the impact of the numerical forecast. As shown above, there is a research opportunity to look at analysts' statements beyond the hitherto studied numerical forecast or one-word recommendations.

Analysts' statements have also been shown to be strongly influenced by the nature of the financing that the evaluated firms choose to obtain. The brief section below delves into the links between firm financing and the analysts, and how such links could likely influence analysts' statements.

Analysts and Firm Financing

Research papers show that analysts, whose employers are investment banking houses with ties to the firms the analysts cover, issue reports that are more favorable towards the evaluated firms as compared to the reports issued by analysts with no such ties to the firms (Dugar and Nathan, 1995; Michaely and Womack, 1999). It would seem that if such biases exist, then the analyst biases would be greatest if there is more potential for increased investment banking business. The potential for investment banking business would be higher if the firm is issuing new securities in the stock market. Investment banking pressures should be the greatest for the firms that are issuing the

most new securities, and they should be the lowest for the firms that have the least need to issue new securities (Dechow, Hutton, and Sloan, 2000; Lin and McNichols, 1998; O'Brien, McNichols, and Lin, 2005). Indeed, Bradshaw, Richardson, and Sloan (2003) found evidence of such analyst bias and favoritism when they analyzed the analysts' forecasts and recommendations. Bradshaw, Richardson, and Sloan (2003) found evidence that sell-side analysts' (ones whose employers are investment banking houses) forecasts and recommendations are most optimistic for firms that are issuing securities and least optimistic for firms that are repurchasing securities. The analysts' positive bias towards affiliated firms seems to be more egregious given that researchers have found that stock returns tend to be unusually low in the three years following securities issuances and unusually high in the three years following securities repurchases (Ritter, 2003; Richardson and Sloan, 2003). Unlike past work which focused on the numerical forecast to tease out analyst bias, I will examine the words surrounding the forecasts for evidence of analyst bias.

In the preceding sections, I have presented arguments suggesting that the characteristics of the analysts and their statements are an important way in which the analysts and their statements vary and that investors are influenced by such characteristics. In addition, the analysts are influenced by the investment banking ties to the firms that the analysts evaluate. In the sections that follow, I expand the arguments to posit hypothesized relationships between the analyst characteristics and the reactions of the investors to the analyst statements.

Hypotheses Development

The hypotheses below postulate that the presence of particular word characteristics in statements by analysts will be considered desirable by investors. The match of the desirable word characteristics will lead to an upward movement in the stock price of the firms evaluated by the analysts.

Hypotheses relating to the market reaction to analysts' words

"Word choice is considered as unimportant by many people, the least consequential of the complex decisions that people make when communicating with one another" (Hart, 2000, p. 35). Whorf (1956) found that the use of subtle word distinctions disclose the author's particular concerns. For example, if the analyst is convinced through his or her research that the outlook for a firm is positive, that analyst is motivated to issue an optimistic statement. Optimistic statements contain language endorsing some person, group, concept, or event, highlighting their positive entailments. Words of praise (*good*, *loyal*), satisfaction (*exciting*, *cheerful*), or inspiration (*courage*, *trust*) contribute to the optimism in analysts' statements, whereas terms of denial (*won't*, *cannot*), hardship (*conflict*, *despair*), or blame (*annoying*, *guilty*) lower the strength of the optimism in the statement.

Ho and Harris (2000) looked at the price responses in the market that resulted from different recommendation rationales provided by analysts to investors, paying special attention to the words behind the investment advice. They found that analysts conveyed more information with more explicit categories and words when their belief in the recommendation was strong. Investors appear to give more weight to revelations of

fundamental firm information (such as analysts' revisions of earnings forecasts) and the interpretation of the information by the analyst. Investors generally passed over explanations focusing on stock market information that is already public. When analysts discussed such items as earnings forecast revisions or assessments of business factors, they accompanied their more optimistic descriptions with more details substantiating their recommendations.

In the present system of conveying recommendations, analysts are constrained by their companies' rating systems, which include a finite number of categories. Some companies adopt a triage approach (*buy*, *neutral*, and *sell*), whereas others have finer partitions. Investors interested in more fine-grained information look to the accompanying report or the media interview for additional information. Ho and Harris (1998) found that sometimes the market effect is as large for a one-level recommendation change as for a three-level recommendation change, even though a reading of the category description would not signal such a portfolio action.

Just as optimistic statements seem to be favored by analysts (Ferreira and Smith, 1999), they are also likely to be favored by investors, who for many reasons might see optimistic statements as indications of stronger future performance. Beneish (1991) and Sant and Zaman (1996) provide support for this view in their finding of a positive market response to optimistic statements. Therefore:

H1: There will be a positive relationship between analysts' statements that have words showing high optimism and the market's response to the analysts' statement.

Analysts are more optimistic when the companies they work for either underwrite the securities of the firms they cover (Lin and McNichols, 1998) or act as the firms' investment bankers (Dugar and Nathan, 1995). Bradshaw, Richardson, and Sloan (2003) provide evidence that sell-side analysts' forecasts and recommendations are most optimistic for firms that are issuing securities in the market, and least optimistic for firms that are repurchasing securities in the market. Analysts are more likely to exhibit an optimistic bias because they are paid, in part, by the amount of commissions they generate (Dorfman, 1991). In addition, sell-side analysts have added incentives to provide optimistic forecasts so as not to upset their companies' clients (Siconolfi, 1992). Dugar and Nathan (1995) showed that the stock market is aware of, and adjusts for, this bias. Therefore:

H2: The magnitude of the market response to analysts' statements showing optimistic words will be less for firms issuing securities than for firms repurchasing securities.

Brown, Foster, and Noreen's (1985) finding that stock price is a leading indicator of analysts' forecast revisions suggests that the analysts' information advantage may be attributable to the incorporation of publicly available stock prices into their forecasts. If so, analysts' comparative advantage over simple automated time-series models may arise from their utilization of public rather than private information. However, this explanation for the analysts' advantage has been challenged. Stickel (1990) shows that the analyst's comparative forecasting advantage appears to result at least partly from the utilization of firm-specific, private information, not from public information reflected in the stock

price. Analysts have been able to generate superior forecasts of firms' future earnings due to the possession of private information and its utilization in their statements (Brown, Richardson, and Trzcinka, 1991; Coggin and Hunter, 1983; Copeland and Mayers, 1982; Dimson and Marsh, 1984; Elton, Gruber, and Grossman, 1986).

Larger firms have richer information environments than smaller firms due to the information acquisition and dissemination activities of analysts and institutional investors (Atiase, 1985; Bamber, 1987; Bhushan, 1989). Thus, it is more difficult for larger firms' managers to withhold their private information, and this is reflected in the fact that the stock prices of larger firms incorporate new information more rapidly (Brown and Kim, 1993). Moreover, the number of analysts following a firm is positively related to firm size (Brennan and Hughes, 1991; Shores, 1990). The larger firms have more information dissemination activities, lower earnings variability, more homogenous analyst expectations, and more analyst coverage (Brennan and Hughes, 1991). Thus, the analysts' comparative advantage when covering larger firms is less as compared to covering smaller firms. Therefore:

H3: The magnitude of the market response to analysts' statements showing optimistic words will be inversely related to the size of the covered firm.

Analysts' pay is often based, in part, on the reputation of the analyst, however; and forecast accuracy is one of the four criteria used to determine membership on prestigious research teams (Stickel, 1992). If reputation is important for analysts, then the negative reputation associated with inaccurate forecasts should reduce the incentive to issue intentionally biased forecasts. However, analysts are subject to costs, such as loss of

client income and access to management, when communicating recommendation changes (Ho and Harris, 2000). The costs of issuing pessimistic recommendations are greater than those associated with optimistic recommendations (Womack, 1996), and analysts are well aware that there can be substantial costs or risks in disseminating pessimistic recommendations. Pratt (1993) describes several costs. First, pessimistic recommendations can harm a brokerage company's present and potential investment banking relationships and thus are discouraged by the company's investment bankers. Second, top management and investment contacts in analyzed firms may limit or cut off the flow of information. Also, pessimistic statements are less frequent than optimistic statements (Womack, 1996); thus, they would be more visible.

Analysts thus expend greater care and effort before issuing a pessimistic report than an optimistic one, and investors react more strongly to pessimistic analyst reports than to optimistic reports (Francis and Soffer, 1997). Taking these findings together, investors would react more strongly to pessimistic statements. Therefore:

H4: Changes in stock price will be of greater absolute magnitude in response to pessimistic analyst statements as compared to optimistic statements with the same score when the analysts are from the sell side.

Note that the current literature, which utilizes forecast revisions and rating changes, supports H4. My contribution would be the following: (a) the study will provide evidence on the impact of words, and (b) the results will provide additional evidence on whether H4 more accurately describes the data.

Certainty is shown in language when it becomes unyielding (Johnson, 1946). Certainty suggests resoluteness, inflexibility, and completeness. Equality terms (*all*, *everyone*), group terms (*headquarters*, *organization*), and tenacious terms (*will*, *shall*) make for high certainty statements, while hesitant terms (*almost*, *might*), specificity (*i.e.,* numerical citations), and self-references (*I*, *me*) reduce certainty. Insistence (a measure of how tightly focused a text becomes) and variety (an index of how many different words are used) also contribute to certainty (Hart, 2000).

The valuation models described by analysts are derived from a logic that is more or less directly adopted from financial theory, such as discounted cash flow or comparisons of price-earnings ratios. The models that the analysts use have well-defined inputs, which generally are taken from the firms' financial reporting. Qualitative parameters typically enter the analyst's quantitative valuation model via the back entrance of the yield requirement, which is primarily estimated on the basis of firm-specific risk. Here, management's trustworthiness is essential. The more open the firm management, the lower its cost of capital. This is because the degree of openness affects the amount of certainty with which the analyst can make his or her forecast (Bildstein-Hagberg, 2003). Assessments of management credibility by analysts are made through personal contacts with the management (Previts, Bricker, Robinson, and Young, 1994). If the communicative link between the analyst and management is maintained well, the analyst can reduce information asymmetry between investors and management (Jensen and Meckling, 1976; Moyer, Chatfield, and Sisneros, 1989).

In cases where analysts, in making their earnings calls, get an opportunity to interrogate management, they are able to read signals and messages that are not explicitly

expressed. For example, an analyst has reported the following about meetings with a forestry firm: "In good times, when the order book is sufficiently large, this fact is spontaneously reported at the analyst meetings. If ordering is slowing down, this is not mentioned at all, and the firm gives vague answers to questions about future ordering. This is ridiculous, as such answers give you enough information anyway" (Bildstein-Hagberg, 2003: 447). Dahya, Karbhari, Xiao, and Mei found similar results when evaluating the comments from management: "What is written is true; the problems are in what is missing" (2003: 316). O'Brien and Bhushan (1990) have observed that analysts seek to avoid uncertainty. They suggest that analysts prefer regulated industries because regulatory oversight and disclosures provide operating information that supplements financial disclosures, thus reducing uncertainty.

Investors, when evaluating a rating recommendation or quantitative earnings forecast, may not fully understand the firm-risk factor used by the analyst to arrive at the recommendation. The accompanying report or the media interview, however, provides more fine-grained information regarding the degree of certainty the analyst wants to convey.

Similar to the preference for optimism, the preference for certainty may be shared by analysts and shareholders. Therefore:

H5: There will be a positive relationship between analysts' statements that show high certainty and the market response to those statements.

Active language displays motion, alteration, the execution of thoughts, and the evading of inaction. The active language subcategories include belligerence (*clash*,

attack), achievement (*advance*, *push*), action (*launch*, *leap*), and communication (*insist*, *encourage*). Inert terms (*quiet*, *hesitant*), intellectualism (*decide*, *believe*), and exaggeration (a measure of heavy modification) would decrease the activity in the language (Boder, 1940). Researchers (e.g., Beneish, 1991) have noted that analysts pay special attention to activity related to matters such as price policy, court decisions, monthly output, and dividends. I would suggest that active words in analysts' statements would convey higher confidence in an optimistic or certainty-laced statement. Again, the active statement may match investors' expectations. Therefore:

RQ1: What is the contribution of activity to analyst statements with optimistic words as measured by the magnitude of the market response to those statements?

RQ2: What is the contribution of activity to high certainty analyst statements as measured by the magnitude of the market responses to those statements?

Hypotheses relating to analysts' word choice based on their employer relationships

Bradshaw, Richardson, and Sloan (2003) provide evidence that sell-side analysts' forecasts and recommendations are most optimistic for firms that are issuing securities (equities and or debt), and least optimistic for firms that are repurchasing securities. Investment banking pressures should be the greatest for the firms that are issuing the most new securities, and they should be the lowest for the firms that have the least need to issue new securities (Dechow, Hutton, and Sloan, 2000; Dugar and Nathan, 1995; Lin and McNichols, 1998; O'Brien, McNichols, and Lin and, 2003; Michaely and Womack, 1999). Thus:

H6: Analysts will use words showing high optimism for firms issuing equity and debt and less for firms repurchasing equity and debt.

Analysts are constrained by the rating system of conveying recommendations, which include a finite number of categories. Ho and Harris (2000) found that analysts conveyed more information with words in the accompanying report. Investment banking pressures should be the greatest for the firms that are issuing the most new securities (Dechow, Hutton, and Sloan, 2000; Dugar and Nathan, 1995; Lin and McNichols, 1998; O'Brien, McNichols, and Lin, 2003; Michaely and Womack, 1999). Again, analysts, when faced with the investment banking pressures and constrained by the number of rating categories, would convey their certainty in the stock recommendation in the accompanying report.

Analysts, in general, seek to reduce their uncertainty. This inclination is evidenced by their preference for regulated industries (O'Brien and Bhushan, 1990). In their interactions with firm management, the analysts seek out clear explanations from firm management (Bildstein-Hagberg, 2003). Analysts ask precise questions and tease out inconsistency from firm management explanations in their quest to reduce uncertainty (Dahya, Karbhari, Xiao, and Yang, 2003). In addition, investment banking pressures are greatest for the analysts, when the firms they cover are issuing the most new securities (Dugar and Nathan, 1995). Consequently, the natural tendency of the analysts to reduce uncertainty is further accentuated when the firms they cover issue new securities. Thus:

H7: Analysts will have higher certainty in their statements for firms issuing equity and debt and less certainty for firms repurchasing equity and debt.

As described in the arguments leading up to Research Questions 1 and 2, active language is denoted by words that signify motion, change, the carrying out of initiatives, and the embrace of activity. Analysts monitor activity in firms by noting items such as price policy, court decisions, monthly output, and dividends (Beneish, 1991). In addition, investment bankers often coerce analysts who cover firms bringing securities to the stock market (Dugar and Nathan, 1995; Lin and McNichols, 1998). Because the rating system is constrained to a few categories, analysts have restricted options to display their confidence of activity in the evaluated firm. The accompanying report, however, allows analysts to express their opinions more expansively. Active words in analysts' statements in their reports would convey higher confidence in an optimistic or certainty-laced statement. Therefore:

RQ3: What is the contribution of activity to analyst statements with optimistic words as measured by the degree to which firms are issuing equity and debt?

RQ4: What is the contribution of activity to analyst statements with high certainty when firms are issuing equity and debt as opposed to when firms are repurchasing equity and debt?

Sell-side analysts have long faced allegations that have been corroborated by research that pressures to generate investment banking business cause them to bias their recommendations (Dechow, Hutton, and Sloan, 2000; Dugar and Nathan 1995; Ho and Harris, 2000; Lin and McNichols, 1998; O'Brien, McNichols, and Lin, 2003; Michaely and Womack, 1999; Pratt, 1993). These allegations resulted in a historical $1.4 billion

settlement between the investment banking companies and regulators (Smith, Craig, and Solomon, 2003). There is evidence of a systematic relationship between corporate financing activities and future stock returns. Stock returns are usually low in the three years following securities issuances and unusually high in the three years following securities repurchases (Ritter, 2003; Richardson and Sloan, 2003). Bradshaw, Richardson, and Sloan (2003) found that analysts issue their most optimistic recommendations around the time of securities issuances. This pattern is consistent with sell-side analysts attempting to promote the stock of issuing firms by touting unrealistically high target prices in the period surrounding and immediately following their securities issuance (Ritter, 2003; Richardson and Sloan, 2003). Therefore:

H8: Analysts will use words with high optimism for firms right around the time of securities issuance.

Hypotheses relating to the market reaction to analysts' characteristics based on their words' usage

The hypotheses that follow suggest that possession of certain characteristics on the part of analysts will be viewed as desirable. The analyst characteristics considered in H9-13 and RQ5 below are the number of firms and industries covered, the analyst experience, company size, forecast frequency, and prior forecast accuracy as covered in the section on analyst characteristics on pages 19 through 22. More positive characteristics for the analysts mean fewer firms and industries covered, more experience, bigger company sizes, higher forecast frequencies, and higher

forecast accuracies for prior forecasts. Please refer to the section on analysts characteristics for more details.

The characteristics' desirability will lead to a positive response in the capital market based on the expectation of good analyst performance. Links between characteristics and performance established in prior academic research may play a role in the creation of expectations. More importantly, and more likely, such stock market responses may be the result of perceptions arising from the analyst's possession of characteristics that match investors' expectations.

Analysts provide investment analysis and advice. Accurate proprietary analysis brings new clients to the analyst's company for investment management services (Kuperman, Athavale, and Eisner, 2003). Thus, if the analyst is convinced through his or her research that the outlook for a firm is positive, that analyst is motivated to issue an optimistic statement. Just as optimistic statements seem to be favored by analysts (Ferreira and Smith, 1999), they are also likely to be favored by investors, who for many reasons might see optimistic statements as signals of stronger future performance. Beneish (1991) and Sant and Zaman (1996) offer backing for this notion in their research results of a positive market response to optimistic statements. Therefore:

H9: High-optimism statements elicit a higher magnitude market response for analysts with more positive characteristics.

While evaluating the performance of a firm, analysts use a quantitative valuation model. However, some of the parameters that are inputted into the valuation model are qualitative. One such qualitative parameter is the yield requirement. The yield

requirement number is primarily estimated by the analyst on the basis of firm-specific risk. The analysts arrive at the estimate of firm-specific risk by evaluating the firm management. Here, management's trustworthiness is essential (Bildstein-Hagberg, 2003). Investors, when evaluating a rating recommendation or quantitative earnings forecast, may not fully understand the firm-risk factor used by the analyst to arrive at the recommendation. The accompanying report, however, provides more fine-grained information regarding the degree of certainty the analyst wants to convey. Certainty is demonstrated in word choice when it becomes inflexible (Johnson, 1946). Similar to the characteristic of optimism, the inclination for certainty may be shared by analysts and shareholders. Therefore:

H10: High-certainty statements elicit a higher magnitude market response for analysts with more positive characteristics.

Active language, as noted in the research questions RQ1 and RQ2 above, features movement, change, the implementation of ideas, and the avoidance of inertia. Investigations (e.g., Beneish, 1991) have found that analysts are interested in matters such as price policy, court decisions, monthly output, and dividends that demonstrate firm activity. Active words in analysts' statements would convey higher confidence in an optimistic or certainty-laced statement. Also, similar to statements with optimism or certainty, the statement with activity may match investors' expectations. Therefore:

RQ5: Would high activity statements elicit higher magnitude market responses for analysts with more positive characteristics?

Hypotheses relating to analysts' word choice based on their characteristics and employer relationships

Analyst's pay is often based, in part, on the reputation of the analyst, however, and forecast accuracy is one of the four criteria used to determine elite membership, namely, top positions in rankings that survey analysts (Stickel, 1992). Thus, both analysts with the less positive characteristics and those with more positive characteristics will have reduced incentives to issue intentionally biased incorrect optimistic forecasts. In addition, prior research documents that analysts' characteristics such as forecast frequency, broker size, general and firm-specific experience, and the number of firms and industries that the analyst follows is associated with forecast accuracy (Clement, 1999; Jacob, Lys, and Neale, 1999; Mikhail, Walther, and Willis, 1997). Also, analysts who issue more accurate forecasts are more likely to attain high status (Hong and Kubik, 2003). Thus, over time, analysts with more positive characteristics belong to the higher status coterie or remain as elite members (Stickel, 1992). The higher-status coterie analysts, due to their past record, would have more license with the tone of the firm research report. Moreover, investment banking pressures (Ritter, 2003; Richardson and Sloan, 2003) would cause an analyst to display more optimism in the affiliated firms (Lin and McNichols, 1998). Affiliated firms are ones with investment banking ties to the analyst's company. Bradshaw, Richardson, and Sloan (2003) provide evidence that sell-side analysts' forecasts and recommendations are most optimistic for firms that are issuing securities and least optimistic for firms that are repurchasing securities. Investment banking pressures should be the greatest for the firms that are issuing the

most new securities, and they should be the lowest for the firms that have the least need to issue new securities.

Therefore:

H11: Analysts with more positive characteristics will use statements with more optimistic words for firms issuing equity and/or debt as compared to the firms repurchasing equity and/or debt.

As noted in hypothesis H11 above, analyst characteristics are associated with forecast accuracy (Clement, 1999; Jacob, Lys, and Neale, 1999; Mikhail, Walther, and Willis, 1997). Analysts who issue more accurate forecasts are more likely to attain high status (Hong and Kubik, 2003). Thus, over time, analysts with more positive characteristics belong to the higher status coterie.

Analyst's pay, as noted in the hypothesis H11 above, is often based, in part, on the reputation of the analyst. Forecast accuracy is one of the four criteria used to determine elite membership (Stickel, 1992). Thus, both analysts with the less positive characteristics and those with more positive characteristics will have reduced incentives to issue intentionally biased forecasts. Also, as shown in the argument advanced for Hypothesis H11 above, specific analyst characteristics are associated with forecast accuracy (Clement, 1999; Jacob, Lys, and Neale, 1999; Mikhail, Walther, and Willis, 1997). High-performing analysts with more positive characteristics over time attain high status (Hong and Kubik, 2003; Stickel, 1992). The higher-status analysts, due to their past record, would have more license with the thrust of the firm research report. Links to investment banking leads to higher pressures on the analysts (Ritter, 2003; Richardson and Sloan,

2003). Consequently, the natural tendency of the analysts to reduce uncertainty (Bildstein-Hagberg, 2003; Dahya, Karbhari, Xiao, and Yang, 2003) is further accentuated when the firms they cover issue new securities. Due to the small number of recommendation labels (Ho and Harris, 2000), high-status analysts could convey more information regarding their bias in the accompanying report. Therefore:

H12: Analysts with more positive characteristics will display a higher certainty for firms issuing equity and/or debt as compared to the firms repurchasing equity and/or debt.

Analyst's pay is often based, in part, on the reputation of the analyst, which in turn is driven by the accuracy of their forecasts (arguments from Hypothesis H3). Thus, both analysts with the less positive characteristics and those with more positive characteristics will have reduced incentives to issue intentionally biased forecasts. Following from hypothesis H8, analysts with more positive characteristics would use the recommendation report to convey their bias for affiliated firms. Bradshaw, Richardson, and Sloan (2003) found that analysts issue their most optimistic recommendations around the time of securities issuances. Analysts have been shown to endorse their covered firm stock by setting very high earnings numbers especially for the duration when the firm stock comes into the market (Richardson and Sloan, 2003). Thus:

H13: Analysts with more positive characteristics will be more optimistic for firms the closer it is to firms' securities issuance.

A summary of the hypotheses and the research questions is presented in Table 1. The research questions and hypotheses presented in this chapter draw on the efficient market hypothesis. In my research questions and hypotheses, I expect the analyst characteristics and their statements to lead to a response in the capital markets. In Chapter 3, I describe the methodology I plan to use in testing the research questions and hypotheses that I have posed.

** Insert Table 1 here **

CHAPTER 3

METHODOLOGY

This Chapter reviews the methods applied for testing the research questions and hypotheses that were developed in Chapter 2. In the first part of this chapter, I detail the two methods—event study and content analysis—that were used for this study. In the latter part of the chapter, I explain how the sample was generated and what data were utilized to collect the sample. Then, I delve into the research variables and their measures. Finally, I finish with a discussion of the analytical plan.

Event Studies

Event study methodology has been widely employed in finance and economics to study the stock price reactions to events (Binder, 1998). Dolley (1933), Myers and Bakay (1948), Barker (1956, 1957, 1958), and Ashley (1962) were the early pioneers in the use of event studies. The methodology was improved by Fama, Fisher, Jensen, and Roll (1969) and Ball and Brown (1968); and it is this form that is utilized now. The technique assumes the validity of the efficient markets hypothesis (Fama, 1970) and measures the impact of some event on the firm's shareholders.

The event study method allows a researcher to determine if an event is significant by evaluating the stock price change of the firm. The event study method starts by estimating a market model for a particular firm. The abnormal returns are then calculated

to reflect the reaction to unanticipated events. The calculation is done in the following way (McWilliams and Sigel, 1997):

$$R_{it} = \alpha_i + \beta_{mt} R_{mt} + \varepsilon_{it}$$

where

R_{it}, = the rate of return on the share price of firm *i* on day *t,*

R_{mt} = the rate of return on a market portfolio of stocks (such as Standard & Poor's 500 or a market index) on day *t,*

a = the intercept term,

β = the systematic risk of stock *i,*

and

ε_{it} = the error term,

One can then estimate the daily abnormal returns *[AR]* for the *i*th firm using the following equation:

$$AR_{it} = R_{it} - (a_i + b_i R_{mt})$$

where a_i and b_i are the ordinary least squares parameter estimates from the regression of R_{it} on R_{mt} over an estimation period preceding the event.

The event study method has been widely used since the 1980s because of the availability of powerful computers and financial databases. The event study method is superior to other methods because it does not rely on accounting-based measures where firm profits can be manipulated (Benston, 1982). Rather, the method relies on stock

prices that should incorporate all relevant information. Finally, the data sources needed in the method, such as the daily stock prices, are available from the Center for Research in Security Prices (CRSP).

The event study method relies heavily on a set of assumptions (Brown and Warner, 1980, 1985), namely, that markets are efficient, that the event was unanticipated, and that there are no confounding effects. In addition, it is important to pay attention to research design issues, such as sample size, nonparametric tests to identify outliers, and the length of the event window (McWilliams and Siegel, 1997). The assumptions and the design issues were taken into account in my study and are discussed in the rest of the section below.

Events and Sampling

In this study, the event of interest is the statement that an analyst makes regarding a firm that he or she is covering. The analyst statement would provide new information to the market, and thus, it would be appropriate to use the event study method. Researchers (McWilliams and Siegel, 1997) using the event study technique recommend that for the proper use of this technique, one should outline hypotheses that justify a financial response to the new information. My theory is that the stock market investors are influenced by the analysts' statements. I have outlined hypotheses in the Hypotheses Development sections above that justify a financial response to the new information in the analysts' statements. My contribution to the body of research is the supposition that the characteristics of the analyst statements, important missing variables in prior research, are influential in determining the market response. The research questions and hypotheses

presented in Chapter 2 were tested using ordinary least squares (OLS) regression. Such tests are unbiased when sample sizes are greater than 50 (Binder, 1998).

Since this study was not looking at longitudinal effects, I was interested in picking a stable representative year, one without major disruptions, and where accurate data is available. I picked 1995 as that year where accurate data for this study were available. Discussions with IBES officials indicated that prior to the early 1990s, the forecast release date IBES recorded often differed from the actual forecast date by a few days; however, the accuracy of the forecast dates improved in the early 1990s (Clement and Tse, 2003b). Clearly, accurate release dates are needed to measure return responses to the forecast revisions. This argued for the research year to be after early 1990s. A major disruption in the financial markets was the impact of Regulation Fair Disclosure (FD). I considered Regulation FD in picking the analysis year so as to minimize the impact of Regulation Fair Disclosure (FD). Regulation FD, issued by the Securities and Exchange Commission in 2000, requires that firms issue material information publicly. During the period of the impending approach of Regulation FD and some years after Regulation FD, there was concern that the analysts would communicate in a different fashion than in a "normal" year when such regulations were not on the horizon or in the rear-view mirror (Levinshon, 2001). To prevent confounding effects from Regulation FD, I did not wish to select samples up to 4 years on either side of Regulation FD. During the data analyses period of this study, analyst data from 1995 rather than 2005 and later were available.

This study focused on industries with high earnings response coefficients. Earnings response coefficients are a measure of the firm stock price response to the firm's earnings (Ball and Brown, 1968; Kothari and Sloan, 1995). I chose those industries

since analyst coverage of the high earnings response coefficient industries tends to be high because the predictability of the stock price is lower allowing analysts to provide useful information to the stock market (Pincus, 1983).

I used the *Institutional Investor* annual rankings to identify the analysts from the All-American Research Team. This source has been used in other studies of responses to analysts' forecasts (e.g., Brown and Chen, 1991). Analysts in the All-American Research Team are clearly valued in the capital market, as evidenced by their high salaries (Dorfman and McGough, 1993). In addition, given their good reputations (Stickel, 1992), they are more apt to be quoted in the press than other analysts are, thus providing more statements for my analysis, increasing my sample size, and averting concerns related to sample size. Analyst statements were obtained from the Thomson Financial First Call database. From the population of analyst statements, analyst statements for inclusion in the sample were selected randomly. This sampling procedure is referred to as simple random sampling. The steps in this simple random sampling are detailed as follows: First, a single number was assigned to each analyst report in the list of the reports that the analyst had written in the year. Then, a table of random elements was used to select reports from the list. McWilliams and Siegel (1997) suggest using bootstrap methods and discussing outlier impacts when confronted by small, $N<30$, sample sizes. I did not have the small sample issue, as the sample size in the study was larger—$N>200$.

Next, I had to decide the length of the event window. Researchers (Brown and Warner, 1980; Peterson, 1989) prescribe an event window of 2 days: the event day and the day before the event. However, I followed the conservative suggestions by MacKinlay (1997) and used a three day window to accommodate any analyst statements

that might have come out after the close of the stock market. Brown and Warner (1980, 1985) recommend against using much longer event windows because of the reduction in the power of the test of excess returns, thus, resulting in false inferences regarding the event's importance. Moreover, empirical studies (Ryngaert and Netter, 1990) have shown that the short event windows capture the significant effect of the event. Dann, Myers, and Raab (1977) demonstrated that the stock price fully adjusted within 15 minutes of the release of firm-specific information, and Mitchell and Netter (1989) found the stock response within 90 minutes of news wire stories regarding tax legislation.

Abnormal Returns

Abnormal or excess returns is the difference between an observed return and an expected return. The observed return is the actual change in the price of a stock over some time interval. The expected return is the change for the stock that would be expected over the same time interval due to the general market change. I use abnormal or excess returns as the measure of changes in investors' expectations. Abnormal returns were measured by excess returns obtained from the CRSP Daily Excess Returns file, as recommended by Lubatkin, Chung, Rogers, and Owers (1986) and used later by Westphal and Zajac (1998) and Lee (2001). The significance of excess returns will be measured using $A_t/S(A_t)$, as suggested by Brown and Warner (1985) for event studies using daily returns. Here, A_t represents the average cumulated excess returns over the observation period, and $S(A_t)$ measures the variance in returns over a previous period, to estimate the expected return. The statistic has a student-t distribution under the null hypothesis, and simulation studies show that it is well specified for samples of 50 or more (Brown and Warner, 1985; Dodd and Warner, 1983).

The other technique used in the dissertation is content analysis. This technique and its application in the dissertation are discussed in the next section below.

Content Analysis

Content analysis has a long history of use in communication, journalism, sociology, psychology, and business. In a comprehensive review of the content analysis methodology, Neuendorf describes it as "a summarizing, quantitative analysis of messages that relies on the scientific method . . . and is not limited as to the types of variables that may be measured or the context in which the messages are created or presented" (Neuendorf, 2002, p. 10). Neuendorf (2002) presented an extensive review and critique of the use of content analysis in communication research. Her study reports that communication researchers have used the technique to assess the impact of a wide variety of messages.

Researchers generally use content analysis methodology to study a message pool, as in the following scenarios:

1. Interpersonal communication that occurs in a dyad or a small group. Bales (1950) developed a comprehensive coding scheme that has been used subsequently (Bales and Cohen, 1979; Bales, Strodtbeck, Mills, and Roseborough, 1951; Greenberg, 1980; Neuendorf and Abelman, 1987).
2. Messaging within a defined organization that occurs in surveys (DiSanza and Bullis, 1999), voice mail (Rice and Danowski, 1991), manager-subordinate control patterns (Fairhurst, Rogers, and Sarr, 1987), and brainstorming discussion groups (Larey and Paulus, 1999).

3. Mass messaging for a large, undifferentiated audience, the overriding (34.8 percent) methodology used in mass communication (Riffe and Freitag, 1997).

Content analysis is an attractive technique to use in studying the role of analysts because it relies on meeting the standards of the scientific method (Bird, 1998; Klee, 1997) and fits the social research paradigm of rigorous objective investigation of behavior (Gunter, 2000).

For researchers, studying words and their contexts in analysts' statements, content analysis is generally more reliable than alternatives, such as assessing analyst behavior and attempting to determine intent (Baldwin and Rice, 1997; Bouwman, Frishkoff, and Frishkoff, 1987; Veit and Murphy, 1996). Analyzing the words used in analysts' statements also allows for data collection through secondary sources, provides objective measures, and permits research replication (Clatworthy and Jones, 1999; Previts, Bricker, Robinson, and Young, 1994; Rogers and Grant, 1997). Moreover, specific to the responses of investors and the impact of analysts, Rogers and Grant suggest that in terms of the practical utility of research results, "content analysis has the advantage that it focuses on the analyst reports . . . and mitigates the possibility that analysts' responses may be unrepresentative or self-serving" (1997, p. 18).

Use of the content analysis technique is based on some strong assumptions (Neuendorf, 2002), however, and requires careful implementation. The key assumptions concern meeting the standards of the scientific method. Below, I describe how my proposed study follows Neuendorf's recommendations regarding objectivity, measures, sampling and hypotheses.

Objectivity and Measures

In their classic work, *The Social Construction of Reality*, Berger and Luckman (1966) point out, that there is no such thing as true objectivity--"knowledge" and "facts" are what are socially agreed on. According to this view, all human inquiry is inherently subjective. However as researchers, we still must strive for consistency among inquiries, however (Neuendorf, 2002). We do not ask, "Is it true?" but rather, "Do we agree it is true?" In this study, the event of interest is an analyst's statement by an analyst. I hope to identify generalizable findings from analyses of multiple analyst statements with well-defined characteristics (see the "Events and Sampling" subsection in the "Event Studies" section above), per Te'eni's recommendation (1998). All decisions regarding variables and their measurement must be made before observations begin (Neuendorf, 2002). To meet the required objectivity, I have outlined an *a priori* design as shown in the "Research Variables and Measures" section below.

The next step was to choose an appropriate measure that will adequately reflect what I want to measure. The full process of validation of measures must be conducted over a series of studies (Janis, 1949). Due to the paucity of content analysis of analysts' statements (which, incidentally, is an impetus for this study), however, I used the measures from the one study to date that have considered content analysis of analysts' statements (Ho and Harris, 2000) as a starting point. They looked at the stock market reaction to analysts' statements and considered content analysis of those statements—namely, the words surrounding the numerical forecasts—rather than just the numerical forecasts themselves (Ho and Harris, 2000). As described in the "Hypotheses

Development" section in Chapter 2, this study moved beyond prior work by considering a more complete profile than this lone example.

Sampling and Hypotheses

It is important to select a sample such that the findings can be applied to other cases in the defined population. The sampling is described in the "Event and Sampling" subsection in the "Event Study" section above. For a content analysis to be generalizable to the population of statements, the sample for the analysis should be randomly generated. Because of the random sampling in my study, I should be able to generalize my findings to the entire population.

A cornerstone of the scientific method is to pose hypotheses and research questions before the data are collected. As described in the "Statement Characteristics" section in Chapter 2, statement characteristics are important in the formation of investors' expectations regarding future firm performance. The research questions and hypotheses presented in Chapter 2 indicate how these characteristics are expected to influence shareholder response and abnormal returns.

Sample and Data Sources

As stated earlier in this chapter, I relied on the *Institutional Investor* annual rankings to identify the All-American Research Team analysts. This source has been used in other studies of responses to analysts' forecasts (e.g., Brown and Chen, 1991). These analysts are clearly valued in the capital market, as evidenced by their high salaries (Dorfman and McGough, 1993). In addition, given their good reputations (Stickel, 1992), they are more apt to be quoted in the press than other analysts are, thus providing more

statements for my analysis. The data sources used in this study were CRSP Eventus, COMPUSTAT, and Thomson Financial First Call I/B/E/S.

Research Variables and Measures

Excess returns

The calculation of this variable involves measuring the difference between an observed return and an expected return, as described in the sections titled "Key Concepts" (in Chapter 1) and "Event Studies" (in this chapter). Data are available in the CRSP Daily Excess Return file.

Analyst Recommendation

Analyst recommendation is the recommendation provided by the analyst regarding a firm. As many analysts have different ratings, I/B/E/S maintains a standard set of recommendations, each with an assigned numeric value: 1. Strong Buy, 2. Buy, 3. Hold, 4. Underperform, and 5. Sell. Each recommendation received from the analysts is mapped to one of the I/B/E/S standard ratings. The analyst recommendation was used as a control variable.

Firm size

This variable was measured in stock equity or firm assets at the time of a statement by an analyst.

Financing Variables

Following from Bradshaw, Richardson and Sloan (2003), external financing was measured as $\Delta XFIN = \Delta EQUITY + \Delta DEBT$, where EQUITY represents the preferred

and common shareholders' equity and DEBT represents total long-term (including amounts due within 1 year).

ΔEQUITY was measured as the annual change in common equity (Compustat date item #60) plus the change in the preferred equity (data item #130) minus net income (data item #172). Since the hypotheses and research questions pertain to the influence of external financing on the analysts, net income was deducted because it is viewed as an internal source of financing. Fair value and foreign currency translation do affect equity. However, such adjustments amount to a small proportion of the equity changes and, in addition, are not systematically associated with returns (Richardson and Sloan, 2003). The change in equity, as measured by change in common and preferred equity and subtracting net income changes, accounts for the external financing transactions. The calculated equity change amount would include all net issuances, repurchases, and dividends for the year. Richardson and Sloan (2003) replicated their balance sheet study using cash flows and found that the results were unchanged. I have used balance sheet data to allow for greater data availability.

ΔDEBT was measured as the annual change in total long-term debt (data item #9) plus the annual change in total debt due within 1 year and included in current liabilities (data item #34). ΔDEBT would thus include convertible debt, subordinated debt, notes payable, debentures, and capitalized lease obligations. Also, ΔXFIN, ΔEQUITY, and ΔDEBT are scaled by average total assets to express them as a proportion of firm size and are winsorized at +/- 1 to minimize the influence of outliers.

Analyst Characteristics Variables

Forecast frequency is the number of forecast revisions that the analyst makes in the year. # of firms and # of industries (2 digit SIC codes) is the number of firms and industries that the analyst follows. General and firm experience is the analyst's general and firm-specific experience in years. The lag forecast accuracy is a measure of the analyst's forecast accuracy for the previous year.

Statement Characteristics Variables

To deal with the large amounts of analyst statement word data, a large capacity text analysis program that can also manage the language complexity was needed. I chose the software program called DICTION (Hart, 1997), a lexically based program that examines a passage by utilizing about 40 dictionaries or word lists.

Many researchers (Fielding and Lee, 1991; Tesch, 1990, 1991: Weitzman and Miles, 1995; Evans, 1996; Klein, 1997; Roberts, 1997; Alexa and Zuell, 2000) have reviewed the different distinguishing features of content analyses software packages available. AQUAD (Huber, 1997), ATLAS.ti (Muhr, 1996, 1997), HyperRESEARCH (Depuis and Tornabeane, 1993), NUD_IST (Richards, 1998), QED and Win-MAXpro (Kuckartz, 1998) are typically considered to have a qualitative research focus, while CoAn, DICTION, DIMAP-MCCA, KEDS (Schrodt, 1998), TEXTPACK (Mohler and Zuell, 1998), TextSmart (TextSmart, 1997) and WordStat are generally used for quantitative research. Software packages such as Code-A-Text and TATOE (Rostek and Alexa, 1998) support analyses for both qualitative and quantitative applications.

During my selection process for a content analyses software package, I considered programs which run on the Windows operating system. Some of the programs have

limitations. DIMAP-MCCA, for example, does not support the definition of a structure element for desired metrics for each analyst report. This inadequacy is because the content analyses module is integrated in the dictionary development and maintenance program. Such inadequacies can lead to loss of information (McTavish and Pirro, 1990; McTavish, Litkowski, and Schrader, 1997). AQUAD, for example, cannot accommodate text lines with more than 60 characters. While, the Win-MAXpro program does allow for the setting of the line length. The basis for such line based coding might be useful for genres such as poetry, but would be more of a hindrance for my analyses of analyst reports.

As noted in the Hypotheses Development in Chapter 2, my focus was on capturing on metrics such as optimism, certainty, and activity for the analysts' reports. I was thus looking for programs that would support automatic coding based on dictionaries. Therefore, I ruled out the qualitative focused programs that would operate according to a scheme of categories. As this dissertation was a first look at the content analyses of analyst reports, I was particularly interested in a software package that had succinct clear summarizations of texts. DICTION matched quite well due to the main dimensions or super categories such as scores of optimism, certainty, and activity that are provided as summaries of a text passage (Hart, 1985: 111). Another attractive feature of the DICTION software was the ability of the program to export to SPSS as it was important for me to statistically analyze the content analyses output with the other stock market and financing variables. Unlike TextSmart which does not allow for categories to be re-used in other projects, the DICTION analyses material is independent from the text analyses package itself. This DICTION feature enables different researchers to exchange

dictionaries and coding schemes in order to validate and cross check their work. Finally, the DICTION program was developed and has been widely used at the University of Texas and thus there is a deep understanding of the uses and the limitations of the program. that a University of Texas at Austin researcher, such as me, can draw upon.

All text analysis programs consist of dictionaries that are used as bases for text searches. Each of DICTION's dictionaries produces its own set of scores. The typical application of dictionaries results in a ratio measurement. For example, using the DICTION program, a text may obtain a tenacity score ranging from 0 (if no tenacity words are counted) to a high numeric score (say 55, if many tenacity words are counted). When dictionary scores are combined (after standardization), they contribute to five "additive variables" that provide a concise approximation of a text's characteristics. DICTION's five additive variables are defined as follows:

1. *Certainty:* language indicating resoluteness, inflexibility, and completeness.
2. *Optimism:* language endorsing a concept or a group, highlighting its positive entailments.
3. *Activity:* language featuring movement, change, implementation, and avoidance of inertia.
4. *Realism:* language describing tangible, immediately recognizable matters that affect the analyst's subject matter.
5. *Commonality:* language highlighting agreement.

In addition to the 5 main semantic features, there are 35 subfeatures (including tenacity, blame, ambivalence, motion, and communication). The results for each of the

dictionary categories are compared to a normal range of scores that were established by running more than 20,000 texts through the program (Hart, 2000).

Analytical Plan

As laid out in Chapter 2, I posed hypotheses and research questions regarding analyst statement characteristics. Some hypotheses suggested relationships where the statement characteristics were independent variables, while other hypotheses proposed statement characteristics that were dependent variables. The four models that fall out from the hypotheses are:

Excess Returns = f (Statement Characteristics, Analyst Recommendation, Firm Size, External Financing)

Statement Characteristics = f (External Financing, Analyst Recommendation)

Excess Returns = f (Statement Characteristics, Analyst Recommendation, Analyst Characteristics)

Statement Characteristics = f (External Financing, Analyst Recommendation, Analyst Characteristics)

The hypotheses and research questions were tested using OLS. OLS was used because the hypotheses and research questions propose linear relationships between the variables.

CHAPTER 4

RESULTS

In this Chapter, I go through the results of the tests that were conducted in the study. Details are provided regarding data collection effort, the research design and the data analysis, the descriptive statistics used for the variables, and the data from the event study and the cross-sectional hypotheses tests. As indicated in the preceding chapter, the circumstance in which an analyst statement is issued has implications for the event study methodology.

Data Collection

As described in Chapter 3, analysts were selected from the *Institutional Investor* All-American Research Team. Randomly selected reports from these analysts were then reviewed. The final sample exceeds the guidance of Stevens (1996) that suggests a sample size of at least 15 observations per independent variable for multiple regression.

COMPUSTAT, I/B/E/S, First Call, CRSP, and Thomson Financial were the primary sources of data on analyst reports, firm financing, and analyst characteristics. Table 2 shows a list of analyst reports, the firm financing data, and the analyst characteristics that were used in this study.

** Insert Table 2 here **

Research Design and Data Analyses

Market reaction to analysts' words

The study looked at the incremental effect of words on the market reaction as compared to the market reaction expected with the analyst forecast revision.

The Regression Equation Ia below was the primary one that was utilized for all the hypotheses and the research questions.

$$\textit{Excess Returns} = \alpha_0 + \beta_0 \textit{Analyst Recommendation} + \beta_1 \textit{Optimism Score} + \beta_2 \textit{Certainty Score} + \beta_3 \textit{Activity Score} + \chi_1 \textit{Firm Size} + \delta_1 \Delta\textit{Equity} + \delta_2 \Delta\textit{Debt} + \varepsilon_1 (\textit{Optimism Score})(\textit{Firm Size}) + \textit{Error}$$

Analyst Recommendation is the analyst's stock recommendation,

Optimism Score, Optimism Score is the analyst statement's Optimism Score,

Certainty Score is the Certainty Score,

Activity Score is the Activity Score,

Firm Size is the Firm Size,

ΔEquity is the annual change in preferred and common shareholders' equity,

ΔDebt is the annual change in total long-term debt (including amounts due within one year), and

Hypothesis 1, which is laid out in Chapter 2, says that there will be a positive relationship between an analyst's statement that has words showing high optimism and the stock market's response to that analyst's statement. *Excess returns*, as shown in Chapter 2, is a measure of the stock market response to an analyst's statement; and *optimism score* is a measure of optimism in a statement. Therefore, if Hypothesis 1 is true, then β_1 is significantly greater than 0, meaning that there is a positive relationship

between Optimism Score and Excess Returns. In Regression Equation Ia above, this would mean that the coefficient β_1 of the *Optimism Score* variable would be significantly greater than zero. Thus, I will be testing the following:

H1: $\beta_1 > 0$

Hypothesis 2 states that the magnitude of the market response to an analyst's statement showing optimistic words will be less for firms issuing securities than for firms repurchasing securities. In other words, H2 re-stated in terms of the model, implies that the predicted market response for firms with *ΔEquity* greater than 0 should be less than the predicted market response for firms with *ΔEquity* less than 0. The magnitude of the market response, as explained in Chapter 2, is measured by *Excess Returns*. The hypothesis is tested at the average of everything in the model, other than *ΔEquity* and *ΔDebt*. In addition, I need to control for the amount of shares issued. Note that the firms issuing securities will have an equity amount (*Equity*) at the end of the year that will be more than that at the beginning of the year. Thus, for the firms issuing securities during the course of the year, the annual change in *Equity* (*ΔEquity*) will be positive. Conversely, for the firms repurchasing securities in the market, *ΔEquity* will be negative. The predicted response of the *Excess Returns* is denoted by Y. Applying similar logic for *Debt*, the hypothesis H2 looks for differences in the predicted values Y, for the analyst statements between firms repurchasing and issuing securities (equity and debt). Therefore, stating the response in a succinct testable format below:

H2: $Y(\Delta Equity > 0) - Y(\Delta Equity < 0) < 0$

$Y(\Delta Debt > 0) - Y(\Delta Debt < 0) < 0$

Hypothesis 3 asserts that the magnitude of the market response to an analyst's statement showing optimistic words will be inversely related to the size of the covered firm. The market response is measured by *excess returns*. The optimism (*Optimism Score*) by size (*Firm Size*) hypothesis can be tested by looking at the slope of the interaction term (*Optimism Score*)(*Firm Size*). The slope of the interaction term is the coefficient ε_1 in the regression equation Ia above. H3 tests for a negative slope, namely,

H3: $\varepsilon_1 < 0$

Hypothesis 4 proposes that the change in stock price will be of a greater absolute magnitude in response to a pessimistic analyst statement as compared to an optimistic statement with the same score. The change in stock price is again measured by *Excess Returns*. Let the predicted value of *excess returns* be denoted by y. The predicted value of the absolute value of *Excess Returns* of pessimistic statements, that is with low *Optimism Score*, represented by LO, will be y_{LO}. Similarly, the predicted value of optimistic statements (designated by HO) will be y_{HO}. H4, looking for a difference of the predicted values, can be stated as:

H4: $y_{LO} - y_{HO} > 0$

As explained in detail in Chapter 2, Hypothesis 5, H5 states that there will be a positive relationship between an analyst's statement that shows greater certainty and the market response to that statement. *Excess Returns* and the *Certainty Score* are measures of the market response and the certainty respectively. In Regression Equation Ia above,

the hypothesized positive relationship would mean that the coefficient has to be positive. Thus, the test for H5 would be:

H5: $\beta_2>0$

For testing RQ1, the following regression equation was used:

Equation Ib:

$$\textit{Excess Returns} = \alpha_0 + \beta_0 \textit{Analyst Recommendation} + \beta_1 \textit{Optimism Score} + \beta_2 \textit{Certainty Score} + \beta_3 \textit{Activity Score} + \chi_i \textit{Firm Size} + \gamma\gamma_i \textit{(Optimism Score). (Firm Size)} + \delta_1 \Delta \textit{Equity1} + \delta_2 \Delta \textit{Debt} + \varepsilon_1 \textit{Optimism Score. Firm Size} + \phi_1 \textit{(Optimism Score) .(Activity Score)} + \textit{Error}$$

The research question RQ1 inquires about the contribution of activity to an optimistic statement as measured by the magnitude of the market response to that statement. Thus, the focus is on the testing is the coefficient ϕ_1 of the interaction term, *Optimism Score) .(Activity Score)*:

RQ1: ϕ_1=?

RQ2 poses a research question regarding the relationship between the magnitude of the market response and the activity usage in analyst statements. Thus, from Regression Equation Ia, where the magnitude of the market response is the dependent variable (measured by the *Excess Returns*), the question is regarding the value of the coefficient β_3 of the *Activity Score* (the measurement of activity):

RQ2: β_3=?

Analyst word choice based on their relationship with investment banking

The following regression equation was used for testing the hypotheses and research questions.

The Regression Equation IIa is:

$$\textit{Optimism Score} = \gamma_{0ea} + \eta_0 \textit{Analyst Recommendation} + \eta_1 \Delta\textit{Equity} + \eta_2 \Delta\textit{Debt} + \iota_1 \Delta\textit{Securities Issuance} + \textit{Error}$$

where *ΔSecurities Issuance* is the absolute value of the time period between the analyst statement and the firm's securities issuance.

H6 hypothesized that the analysts would be more optimistic for firms issuing equity and debt, and less optimistic for firms repurchasing equity and debt. *ΔEquity* and *ΔDebt* are the annual change in a firm's equity and debt position. Therefore, firms that are issuing securities during the year would have increased values of *ΔEquity* and *ΔDebt* respectively. H6 suggests that analysts will be more optimistic (measured by the *Optimism Score*) for firms issuing securities (namely, increased *ΔEquity* and/or *ΔDebt* values). Thus, for H6, the test would be to see if the coefficients η_1 and η_2 are positive in the Regression Equation IIa:

H6: $\eta_1>0$, $\eta_2>0$

The Regression Equation IIb is:

$$\textit{Certainty Score} = \varphi_0 + \kappa_0 \textit{Analyst Recommendation} + \kappa_1 \Delta\textit{Equity} + \kappa_2 \Delta\textit{Debt} + \lambda_1 \Delta\textit{Securites Issuance} + \textit{Error}$$

H7 suggests that analysts will have higher certainty in their statements for firms issuing equity and debt, and less certainty for firms repurchasing equity and debt. In Regression Equation IIb above, similar to the tests for H6 above, the coefficients κ_1 and κ_2 would be positive if H8 is true:

H7: $\kappa_1>0$, $\kappa_2>0$

Regression Equation IIc is

$$\textit{Activity Score} = \pi_0 + \theta_0 \textit{Analyst Recommendation} + \theta_1 \Delta\textit{Equity} + \theta_2 \Delta\textit{Debt} + \rho_1 \Delta\textit{Securites Issuance} + \sigma_1 \Delta\textit{Optimism Score} + \tau_1 \textit{(Optimism Score) . } \textit{(}\Delta\textit{Equity)} + \textit{Error}$$

Research Question RQ3 examines the contribution of activity to an optimistic statement as measured by the degree to which the firm is issuing equity and debt. Regression Equations IIc and IId are used to find the value of the coefficient of the interaction terms *(Optimism Score) . (*Δ*Equity)* and *(Optimism Score) . (*Δ*Debt)*, respectively:

RQ3: τ_1=?, τ_2=?

Regression Equation IId is

$$\textit{Activity Score} = \upsilon_0 + \varpi_0 \textit{Analyst Recommendation} + \varpi_1 \Delta\textit{Equity} + \varpi_2 \Delta\textit{Debt} + \omega_1 \Delta\textit{Securites Issuance} + \xi \Delta\textit{Optimism Score} + \psi_1 \textit{(Optimism Score) . } \textit{(}\Delta\textit{Debt)} + \textit{Error}$$

RQ3: ψ_1=?, ψ_2=?

The two interaction terms, *(Optimism Score) . (ΔEquity)* and *(Optimism Score) . (ΔDebt)*, had a slight correlation. Therefore, in order not to influence the *Statement Characteristics = f (External Financing, Analyst Recommendation)* model, it was decided to run the model separately, once, with each interaction term.

The Regression Equation IIe is:

$$\textit{Activity Score} = \zeta_{0ie} + \alpha\alpha_0 \textit{Analyst Recommendation} + \alpha\alpha_1 \Delta\textit{Equity} + \alpha\alpha_2 \Delta\textit{Debt} + \alpha\beta_1 \Delta \textit{Securities Issuance} + \textit{Error}$$

RQ4 considers the extent of activity language in an analyst statement's language, and asks how that activity is affected by the nature of the analyst-covered firm's financing structure. The financing structure is determined by the change in the equity *ΔEquity* and debt *ΔDebt* positions. With the model, *Statement Characteristics = f (External Financing, Analyst Recommendation)*, the values of high *Activity Score* resulted in a minimal variation of the *Optimism Score* compared to the whole range of the *Optimism Score*. Similarly, for the low values of the *Activity Score*, there was a minimal variation of the *Optimism Score* compared to the whole range of the *Optimism Score*. Therefore, the *Optimism Score* variable was not considered in the Regression Equation IIe. RQ4 tests for the value ($\alpha\alpha_1$ and $\alpha\alpha_2$) of the *ΔEquity* and *ΔDebt* coefficients:

RQ4: $\alpha\alpha_1$=?, $\alpha\alpha_2$=?.

The Regression Equation IIf is:

$$\textit{Optimism Score} = \pi_0 + \theta_{10} \textit{Analyst Recommendation} + \theta_{1a} \Delta\textit{Equity1} + \theta_1 \Delta\textit{Debt} + \rho_1 \Delta \textit{Securities Issuance} + \textit{Error}$$

H8 hypothesizes that analysts will be most optimistic for the firm right around the time of securities issuance. Thus, H8 tests for the coefficient of *Δ Securities Issuance* (the time period between the analyst statement and the firm's securities issuance):

H8: $\rho_1 > 0$

Market reaction to analysts' characteristics based on their words used

Model is

Excess Returns = *f* (*Statement Characteristics*, *Analyst Recommendation, Analyst Characteristics*)

Hypotheses H9 and H10 posit that high optimism and high certainty statements respectively would elicit a higher excess return for analysts with more positive characteristics. Similarly, Research Question RQ5 asks whether high activity statements would elicit a higher excess return for analysts with more positive characteristics. Thus, in the Regression Equation III below, the excess returns would be higher for higher values of the analyst characteristic variable for high optimism and high certainty statements, implying that the coefficient α_1 has to be positive if H9 and H10 are true. As noted in Chapter 2, the hypotheses will be tested for all the analyst characteristics. Similarly, RQ5 tests for the value of the coefficient α_1 as it relates to activity.

The regression equation III is given below.

Excess Returns = α_0 + α_0*Analyst Recommendation* + α_1*Analyst Characteristic* + *Error*

H9, H10: $\alpha_1 > 0$

RQ5: α_1 = ?

Analyst word choice based on their characteristics and investment banking relationship

The Model for these of hypotheses and research questions us the following:

Statement Characteristics = *f* (*External Financing*, *Analyst Recommendation, Analyst Characteristics*)

Hypothesis H11 suggests that analysts with more positive characteristics will use statements with more optimistic words for firms issuing equity and/or debt and as compared to firms repurchasing equity and/or debt. Issuing debt and equity would mean that the annual change in *ΔEquity* and *ΔDebt* will be positive. Thus, in Regression Equation IVa below, for testing H11, coefficients δ_5 and δ_6 of the interaction terms *(ΔEquity)* (*Analyst Characteristics*) and *(ΔDebt)*(*Analyst Characteristics*) will be tested to see if positive.

The Regression Equation IVa is

$$\textit{Optimism Score} = \delta_0 + \delta_0 \textit{Analyst Recommendation} + \delta_1 \textit{Stock Rating} + \delta_2 \Delta\textit{Equity} + \delta_3 \Delta\textit{Debt} + \delta_4 \textit{Analyst Characteristics} + \delta_5 (\Delta\textit{Equity})\ (\textit{Analyst Characteristics}) + \delta_6\ (\Delta\textit{Debt})(\textit{Analyst Characteristics}) + \textit{Error}$$

For each characteristic:

H11: $\delta_5 > 0$, $\delta_6 > 0$

Hypothesis H12 suggests that analysts with more positive characteristics will be display more certainty in their statements for firms issuing equity and/or debt and as compared to firms repurchasing equity and/or debt. As advanced in the arguments for

H11, issuing debt and equity would mean that the annual change in *ΔEquity* and *ΔDebt* will be positive. Thus, in Regression Equation IVb below, for testing H12, coefficients ε_5 and ε_6 of the interaction terms *(ΔEquity)*(*Analyst Characteristics*) and *(ΔDebt)*(*Analyst Characteristics*) respectively will be tested to see if positive.

The Regression Equation IVb is

$$\textit{Certainty Score} = \varepsilon_0 + \varepsilon_0 \textit{Analyst Recommendation} + \varepsilon_1 \textit{Stock Rating} + \varepsilon_2 \Delta\textit{Equity} + \varepsilon_3 \Delta\textit{Debt} + \varepsilon_4 \textit{Analyst Characteristics} + \varepsilon_5 (\Delta\textit{Equity})(\textit{Analyst Characteristics}) + \varepsilon_6 (\Delta\textit{Debt})(\textit{Analyst Characteristics}) + \textit{Error}$$

For each characteristic

H12: $\varepsilon_5 > 0$, $\varepsilon_6 > 0$

Hypothesis H13 suggests that analysts with more positive characteristics will be more optimistic in their statements regarding a firm right around the time of securities issuance. Securities issuance is when the firm issues equity and/or debt in the market. (*ΔSecurities Issuance*) is the time difference between the analyst statement and the securities issuance. Thus, in Regression Equation IVd below, the test for H13 looks at the coefficient of the interaction term (*ΔSecurities Issuance*$\tilde{}$)(*Analyst Characteristics*).

The Regression Equation IVc is

$$\textit{Optimism Score} = \gamma + \gamma_0 \textit{Analyst Recommendation} + \gamma_1 \textit{Stock Rating} + \gamma_2 \Delta\textit{Equity} + \gamma_3 \Delta\textit{Debt} + \gamma_4 \textit{Analyst Characteristics} + \gamma_5 (\Delta\textit{Securities Issuance})(\textit{Analyst Characteristics}) + \textit{Error}$$

For each characteristic

H13: $\gamma_5 = 0$

Descriptive Statistics

Means and standard deviations for the dependent and the independent variables are summarized in Table 3. The distributions of the dependent and the independent variables are displayed in Figure 2.

** Insert Table 3 and Figure 2 here **

The Optimism Score median of all the analysts in this study was 0.5003, very close to the midpoint, 0.5, of the 0 to 1 range. This aspect shows that the analyst statements studied included about an equal mix of optimistic and pessimistic statements. The Activity Score median was at 0.4853, again close to the midpoint of the 0-1 range, and again showing that the analyst statements researched here displayed both inactive and active language to an equivalent degree. However, the lower Certainty Score median, 0.3518, and the distribution of the Certainty Scores ranging from 0 to 0.5335, the lower end of the 0 to 1 range scale, demonstrate that analysts on an average used ambiguous language in their statements.

The ΔEquity mean was 0.083, higher than the mean, 0.061, in the Bradshaw, Richardson, and Sloan (2003) study. A higher ΔEquity number signifies more equity issuances by the firms. The higher ΔEquity mean observed in this study may be due to the fact that I focused on the *Institutional Investor* All-American Team, which being prestigious can compete for, and pay more attention to, firms that generate more lucrative investment banking business. In addition, the ΔEquity and ΔDebt numbers were positive.

The positive numbers suggest that the analyzed firms were characterized by a predominance of net issuances rather than repurchases in the stock market. Net issuances means that the firms issued net securities (issuances – buybacks) in the market. The two categories of securities in the market are debt and equity. Among the issuances, most of the activity takes place in the equity category, with mean issuances of 8.3% and standard deviation of 14.1%. Debt financing plays a somewhat lesser role with a mean of 2.0% and a standard deviation of 12.9%. The mean (median) of the firm size by equity of the sample firms is $2,797 ($703) million, much larger than the $930 ($241) million of all COMPUSTAT firms. The relatively large market values of the sample reflect the selection bias inherent in firms that attract analyst coverage.

There were some interesting observations in the analyst characteristics. The mean of the IBES Recommendation Code was 1.96, close to a *Buy*, which is a code 2. This analysts' bias towards buying stocks could be due to the bullish year 1995, which this study focused on. Or, it could be driven by the analysts' link to investment banking and the strong pressure to recommend the stock (Lin and McNichols, 1998). The descriptive statistics from this study were compared to the Clement and Tse (2005) paper. This study focused on highly regarded analysts, while the Clement and Tse (2005) paper considered general analysts. The comparison of the characteristics between the general analyst pool and the highly regarded All-American team analysts allowed for some interesting insights. The mean of forecast frequency (the number of forecasts by the analyst in a given year) in this study was about 3.12, close to the Clement and Tse (2005) study of 3.8. The means of firm and general experience in the Clement and Tse (2005) paper were 3.8 and 5.7 years, respectively. These numbers compare well to the means of this study—

3.5 and 7.2 years. The means of the number of firms followed was 21, very close to the ones (21) calculated in the Clement and Tse (2005) paper. However, the number of industries followed in this study was 4.2, which was much lower than the number (5.9) in the Clement and Tse (2005) paper. One possible explanation for this difference is that in this study, the analysts, being from the All-American Team, were prestigious and highly paid. These analysts are expected to be highly accurate in their forecasts. Past research (Jacob, Lys, and Neale, 1999; Clement, 1999) has shown that the forecast accuracy declines as analysts follow more industries. Thus, the analysts in this study would tend to cover a lower number of industries.

The correlations among the variables showed some interesting results. A summary of the numbers is shown in Table 4. I focused mainly on the correlations tied to the language content analysis, as this was the study's main contribution. Other variables' relationships, ones tied to *External Financing* and *Analyst Characteristics*, have been researched earlier, as detailed in Chapter 2. The relationship ($R^2 = 0.05$, $t = 3.68$, $df = 257$, $p<0.001$) between the *Optimism Score* and the *Activity Score* was significant but the correlation was weak, highlighting the aspect that when the analysts were endorsing a concept with optimism, they may not use active language at the same time. There was no relationship between the *Optimism Score* and the *Certainty Score* ($R^2 = 0.006$, $t = 1.27$, $df = 258$, $p = 0.21$), and between the *Certainty Score* and the *Activity Score* ($R^2 = 0.001$, $t = -0.58$, $df = 257$, $p = 0.56$).

** Insert Table 4 here **

Regression Results

The sample provides adequate power as discussed in MacKinlay (1997). Results from the power computation for the various regression equations are displayed in Table 5. Tests of the hypotheses were performed using cumulative abnormal returns during the 2-day (-1, 0) and 3-day (-1, 1) event windows. The *Analyst Recommendation* was insignificant in 86% of the cases, so the *Analyst Recommendation* variable was dropped from all models. This enabled the models to be more parsimonious and more directly comparable to each other. A summary of the results from the testing is shown in Table 6. The results are presented below. Discussions of the findings are included in Chapter 5.

** Insert Tables 5 and 6 here **

Market reaction to analyst words

H1, where the test was to check for the existence of a positive relationship between an optimistic analyst statement and the market response, was not supported. H2, which tested for the predicted optimistic bias for firms that issue securities as opposed to repurchasing securities was not supported either.

H3, which tested for the magnitude of the market response to an analyst's statement showing optimistic words as it relates to firm size, was supported. H3 was supported for large firm sizes, >$600M by equity and >$1B by assets. H3 support was both for firm size as measured by equity ($R^2 = 0.083$, $t = -2.04$, $df = 115$, $p<0.05$) and for firm size as measured by assets ($R^2 = 0.095$, $t = -2.18$, $df = 116$, $p<0.05$) for the 3-day event window. Thus, the market response showing optimistic words was negative for

larger firms that were covered. H4 was not supported. The hypothesis looked for the market response of a pessimistic versus an optimistic statement.

H5, which tested for the relationship between an analyst's statement that has words conveying certainty and the market response was not supported. The interaction between activity and optimism in the statements was tested. The results did not show any relationships (RQ1). However, there was support for the posited relationship between active words usage in analyst statement and the market response (RQ2). The support was for the groups of statements that had low activity words. For firm size measured by assets, support was observed both for the 2-day ($R^2 = 0.132$, $t = -1.84$, $df = 211$, $p<0.1$) and the 3-day window ($R^2 = 0.130$, $t = -1.72$, $df = 210$, $p<0.1$). Likewise, tests conducted when the firm size was measured by equity were supported – 2-day window ($R^2 = 0.140$, $t = -2.12$, $df = 210$, $p<0.05$) and 3-day window ($R^2 = 0.140$, $t = -2.04$, $df = 210$, $p<0.05$).

Analyst word choice based on their relationship with investment banking

The lack of support in this study for the majority of the hypotheses relating to word choice and investment banking relationships was a surprise. Analysts did not seem to show any bias towards potential or current investment banking clients in their statements (H6, H7, and RQ4). The word usage bias also did not coincide with the timing of new issuances (H8). However, there was a relationship between the analysts' use of active words in optimistic statements with both equity issuances ($R^2 = 0.072$, $t = -1.85$, $df = 196$, $p<0.1$) and debt issuances ($R^2 = 0.070$, $t = 1.76$, $df = 196$, $p<0.1$). The direction of the slope coefficient was opposite to the direction expected (RQ3).

Market reaction to analysts' characteristics based on their words used

This set of hypotheses was tested to see if the possession of certain characteristics on the part of analysts who have issued statements will be viewed as desirable. The desirability would lead to a positive response in the capital market based on the expectation of good analyst performance. Some analyst characteristics' hypotheses were supported.

Optimistic and pessimistic statements

Among the seven characteristics tested, (forecast frequency, belonging to the largest decile, number of firms and industries followed, general and firm-specific experience, and lag forecast accuracy), support was observed for H9 for three of them. H9 was testing for incremental excess returns from optimistic analyst statements from analysts that had more positive analyst characteristics. There was a relationship between the market reaction for the 'forecast frequency' analyst characteristic and analyst optimistic statements for both the 2-day ($R^2 = 0.031$, $t = 1.84$, $df = 106$, $p<0.1$) and the 3-day window ($R^2 = 0.042$, $t = 2.15$, $df = 106$, $p<0.05$). Also, when the tests were performed against the analysts who were in the largest decile cohort (a total of 55), the relationship was significant between the largest decile cohort and pessimistic statements. Pessimistic statements from these analysts in large companies produced marked negative excess market returns for both the 2-day ($R^2 = 0.349$, $F = 9.10$, $df = 17$, $p<0.1$) and the 3-day window ($R^2 = 0.293$, $F = 7.06$, $df = 17$, $p<0.05$). The analyst experience characteristic showed a relationship ($R^2 = 0.208$, $t = 2.11$, $df = 17$, $p<0.05$) with pessimistic analyst statements for the 2-day window.

Certain and uncertain statements

The magnitude of the market response was related to analyst statements with words conveying certainty (H10) for a 2-day window ($R^2 = 0.040$, $t = 1.90$, $df = 88$, $p<0.1$), and for a 3-day window ($R^2 = 0.053$, $t = 2.21$, $df = 88$, $p<0.05$). The uncertain statements by these same analysts who made frequent forecasts were significant related to the market reaction for the 2-day window excess returns tests ($R^2 = 0.126$, $t = -2.25$, $df = 35$, $p<0.05$). Finally, tests with the analyst characteristic of firm experience for the 2-day window were supported ($R^2 = 0.207$, $t = -3.03$, $df = 35$, $p<0.005$). Thus, the market reacted when an experienced analyst used uncertain language in his or her statement.

Statements conveying activity or inactivity

In the research question (RQ5) pertaining to analyst statements with words conveying activity, relationships were observed for analysts with more general and firm-specific experience. The 'experience' analyst characteristic was also related to the market for a 2-day window ($R^2 = 0.069$, $t = -1.97$, $df = 52$, $p<0.1$) for the general experience, and the 3-day window ($R^2 = 0.023$, $t = -1.11$, $df = 52$, $p<0.05$) for the firm-specific experience. The direction of the market reaction was negative when the analysts made uncertain statements.

Analyst word choice based on their characteristics and investment banking relationship

H11 was testing whether analysts with more positive characteristics would use statements with more optimistic words for firms issuing equity and/or debt as compared to firms repurchasing equity and/or debt. The results showed that analysts who followed more industries were found to be more optimistic ($R^2 = 0.133$, $t = 1.73$, $df = 99$, $p<0.1$)

when they reported on firms issuing equities as compared to firms repurchasing equities. However, the direction of the result was opposite to what was predicted. No such relationship with the 'industry coverage' characteristic was seen for debt securities. Another analyst characteristic hypothesis relating to their use of words pertained to analyst firm experience. More experienced analysts used more optimistic words for firms with equity issuances ($R^2 = 0.141$, $t = -2.23$, $df = 99$, $p<0.05$). Here, too, the direction of the result was opposite to the prediction of the hypothesis.

When looking at statements for the use of words conveying certainty or uncertainty, the relationship relating to analyst firm experience was observed. Analysts who were more experienced used more words that displayed uncertainty for firms that were issuing equities ($R^2=0.108$, $t = -2.83$, $df = 99$, $p<0.01$). The direction of the result was counter to what was expected. No such hypothesis support or relationship was observed for debt issuances. There was no support for H13. H13 suggested that analysts with more positive characteristics would use more optimistic words in their statements right around the time of the firms' securities issuance.

Some overall conclusions from the above results would be the following:

1. Words in the analyst statements conveying activity, namely aggressiveness, movement, change, and implementation, influenced investor actions. Moreover, investors reacted to statements with concurrent optimism and activity.
2. Analyst firm experience seems to be a key characteristic that investors focus on among the characteristics researched in this study.

3. I found a relationship between analysts using words conveying activity or lack of activity and the companies' investment banking relationships.

As noted in this Chapter above, some of the research hypotheses were not supported. However, as will be discussed in the following Chapter 5, there were new insights that were gleaned from the results of this study. The next Chapter will also cover the implications for practice, the limitations of this study, and avenues for future research.

CHAPTER 5: DISCUSSION

In this study, I explored the language that analysts use. The study focused on when and how securities analysts' statements matter by analyzing the reactions to analysts' statements. The dissertation reviewed variables, hitherto unexplored, to construct a more complete profile of analysts' statements. Moreover, this dissertation explored how the firms' financing, issuances and repurchases of debt and equity, influenced the analysts. Finally, the effect of analysts' characteristics was also studied. The body of research in the area that deals with the consequence of analyst statements has failed to consider an important set of variables—the words in the analyst statements. These variables were included in this study's models to attempt to understand the equivocal results that have been obtained in earlier work in the area of analysts' statements.

Analysts' words are crucial for investors because of what they may say about firms in the capital markets. Also, extant literature shows that analysts' statements can guide us regarding analysts' behavior and choices. Empirical research using the above logic has led to much work where the analyst statement characteristics are liked to firm performance. These characteristics often influence our core beliefs about analyst-covered firms, particularly when the information about the firms is limited. Capital market participants, often facing limited information about firms, are likely to pay attention to and lean on the information in analysts' statements. The information is easily accessible in the media and easy to understand. Given our nonstop news coverage, the investors can access the information rather quickly and draw their conclusions about a statement. If the

investors see the link between the analyst statement and the firm performance, this might reinforce the statement-performance link for successive statements. In an efficient financial market, the market values that are assigned to firms by investors are based on expectations of future performance. Any information by analysts that alters those expectations changes stock prices.

This study developed hypotheses that explored the links between the analyst statements and the market performance of the firms covered by the analyst. The research set out to buttress the following points: (1) stock markets are efficient, (2) analysts and their statements matter, and (3) whether or not analysts' statements matter depends on the words used in them. Some of the hypotheses were not supported, some were supported. All in all, the points above were supported in some way in this research leading to some key findings.

The event study results show that analysts matter to investors, thus confirming earlier work in this area (Bjerring, Lakonishok, and Vermaelen, 1983; Copeland and Mayers, 1982; Groth, Lewellen, Schlarbaum, and Lease, 1979). The market response—positive or negative depending on the statements—to the analyst statements in this research suggests that the investors are of the opinion that "analysts matter." In addition, the results of this study substantiate earlier research showing the importance of the numerical forecast and the one-word recommendation.

The key focus of this study was to study analyst statements in more depth, beyond the numerical forecast and the one-word recommendation. As noted in this study, statement characteristics, that were not studied previously, were included in this study. However, the inclusion of statement characteristics yielded mixed results. My supposition

was that investors would pay attention to and favor the analyst statements that possess characteristics that match recent trends in capital markets. However, the supposition was not supported for all statement characteristics in all circumstances. The addition of some of the characteristics improved the predictive ability of the model, and the addition was statistically significant. Significant relationships were obtained when testing some of the analyst characteristics, but the direction was opposite to some of the trends and the hypotheses, suggesting that further investigation is necessary. Past research, which was covered in the Literature Section, has shown equivocal findings for these analyst characteristics. Possible reasons for the equivocal findings could be missing variables. Variables that could be included in future research, namely those related to the non-verbal portions of the analyst communications, may lead to better predictability.

The most interesting results of this research are the findings with regard to when exactly investors pay special attention to the words in the analyst report. The analysts provide information with their numerical forecast and the one-word recommendation; but in certain circumstances, this study saw incremental attention from investors. One was that the lack of active language in the reports caused a negative market reaction. The study showed that there was a bias of the analysts (in the sample period studied) to issue positive recommendations. Investors, aware of this bias, pay special attention to the lack of words supporting the one-word recommendation. A summary of the findings and the tie-in to previous research are reported below.

Market reaction to analyst words

There is evidence (Branson, Guffey, and Pagach, 1998) that there are market reactions to analysts' forecasts. Researchers have found abnormal stock-price performance on the day of the analysts' reports (Bjerring, Lakonishok, and Vermaelen, 1983; Copeland and Mayers, 1982; Davies and Canes, 1978; Groth, Lewellen, Schlarbaum, and Lease, 1979; Womack, 1996). This study moved beyond the prior work, by looking at the actual words used in the analysts' statements. The results of the test of the hypotheses regarding statements characteristics show that these characteristics do make a difference in the market's response to the statement. However, not all the hypothesized characteristics showed significant relationships.

The results of the hypotheses testing of the market reaction to the analyst's statements are shown in Table 6. The magnitude of the market's response to analysts' level of optimism in their statements was tested for all statements and there was no significant relationship observed. However, when a subset of the analyst statements were tested, namely the optimistic ones, the magnitude of the market response was found to be inversely related to the size of the covered firm. The support was significant both when firm size was measured by equity as well as by assets. The conclusion one can draw from the market reaction to the analysts' statements is that investors believe that analysts have a comparative advantage in larger firms (possibly due to the utilization of firm-specific, private information) that was not reflected in the stock price prior to the analyst statement. Although, larger firms having a richer information environment than smaller firms (Atiase, 1985; Bamber, 1987; Bhushan, 1989) and afford less opportunity for the firms' managers to withhold private information from the analysts (Brown and Kim,

1993), this study demonstrates that the choice of words in the analysts' reports pertaining to the larger firms does provide new relevant information to the investors. However, the result was only teased out for the 3-day window, indicating that more than 2 days might be necessary for investors to digest and appreciate the information in the analyst reports covering larger firms.

Another set of tests that were supported related to the use of active words by analysts. Lack of active language in the analyst reports caused a negative reaction in the market. This was a revealing result that did not match the analysts' one-word (*Buy*, *Sell*, etc.) recommendations necessarily. Interestingly, when investors did not see sufficient supporting active language in the accompanying analyst report, the one-word recommendation did not matter. Rather, the lack of active language signaled to the investors the lack of confidence in the aggressiveness and accomplishment in the firm's management.

Lack of support for the other hypotheses also provides useful information. Researchers were right in not exploring analyst words for incremental information, beyond the numerical forecast. The results indicated lack of support for hypotheses that posited a relationship between analyst reports containing words denoting optimism and certainty and the market reaction. Thus, it appears that the numerical forecast and the one-word recommendation are sufficient to explain the market reaction to analysts' pronouncements.

The hypothesis asserting that the magnitude of the market response to the level of optimism in an analyst's statement would be directly related to the degree of firm equity/debt issuances was not supported. The non-support for this hypothesis ran counter

to prior research. The reasons might have to do with the analysts' employers. Analysts have been found to be more optimistic when the companies they work for either underwrite the securities of the firm (Lin and McNichols, 1998) or act as the firms' investment bankers (Dugar and Nathan, 1995). Bradshaw, Richardson, and Sloan (2003) provide evidence that sell-side analysts' forecasts are most optimistic for firms that are issuing securities, and least optimistic for firms that are repurchasing securities. However, the results of this study show that the words do not convey such optimism. This is more fully explained in the following section.

Analyst word choice based on their relationship with investment banking

Richardson and Sloan (2003) showed that the analysts manipulate their investment advice in response to investment banking pressures. However, the lack of support for the majority of the hypotheses (pertaining to the analyst word choice and investment banking relationship) show that the analyst words convey no such bias in the accompanying analyst reports. The one exception was for optimistic statements that had active language. These types of statements were used by analysts when the firms were issuing securities. This relationship was demonstrated for both equities and debt issuance. However, the direction of the results was opposite to the direction predicted. The investigation of statements with concurrent optimism words and words conveying certainty and the market response was posed as a research question because there was insufficient extant research to justify setting up a hypothesis. From this result, it seems that analysts view issuing equities very differently from issuing debt. The predominance of equity issues, as shown in the mean and the standard deviations in the Descriptive

Statistics section, leads me to believe that the analysts pay more attention to equities. However, analysts either are anxious or are subconsciously conveying their doubts about the aggressiveness of the firm in the words that they use. In the past, the accompanying analyst forecasts and their recommendations that show bias have been shown to be positively biased (Bradshaw, Richardson, and Sloan, 2003). Understanding the reason for the discrepancy between the analyst forecast and the recommendation (which shows bias towards the affiliated firms) and the words (which lack bias or are sometimes biased in the opposite direction) used in the analyst report would be a fruitful avenue for future research.

Market reaction to analysts' characteristics based on their words used

This set of hypotheses was tested to see if the possession of certain characteristics on the part of analysts who have issued statements will be viewed as desirable. The desirability will lead to a positive response in the capital market based on the expectation of good analyst performance. Some analyst characteristics showed significant relationships.

Optimistic and pessimistic statements

Market reaction was seen for a 2-day window and for a 3-day window for analysts who made frequent forecasts with optimistic statements. Forecast frequency is a proxy for the amount of effort an analyst devotes (Jacob, Lys, and Neale, 1999) to following a firm and can be important for explaining future accuracy. Interestingly, another result was that if analysts from companies that were in the largest decile of companies were pessimistic, then the market reacted negatively. This result was observed for a 2-day

window and for a 3-day window. The largest decile companies have a huge retail outlet to make their opinions known, and the market would have a higher probability of reacting due to the widespread dissemination of information. Interestingly, there was no market reaction observed for optimistic news indicating that the market seemed to pay more attention to words that convey bad news.

The direction of one result that follows below was unexpected and opposite of what was predicted. The excess returns were more positive for analysts with more general experience and who made pessimistic statements. My study will add to the list of studies that have found confounding results for this analyst characteristic. Mikhail, Walther, and Willis (1997) and Jacob, Lys, and Neale (1999) found that forecast accuracy increases as analysts gain firm-specific experience, but they found no association for general forecasting experience. On the other hand, Clement (1999) found that analyst forecast accuracy increases with both firm-specific and general forecasting experience, although he found that an additional year of firm-specific forecasting experience was associated with greater improvement in forecast accuracy than an additional year of general forecasting experience. This study has added another data point in the research concerning the analyst characteristic pertaining to general experience.

Certain and uncertain statements

Market reactions were observed for a 2-day window and for a 3-day window for analysts who made frequent forecasts with statements that conveyed certainty. As noted above, forecast frequency is a proxy for the amount of effort an analyst devotes (Jacob, Lys, and Neale, 1999) to following a firm and can be important for explaining future accuracy. Investors reacted strongly to analysts who made frequent forecasts with

certainty, as shown in their words usage in the reports. The converse was also true, namely, that the market reacted negatively to uncertain statements from an analyst who makes frequent forecasts. Also, market reaction was seen for statements by analysts with more firm-specific experience. The results showed that if an analyst with substantial firm experience conveyed uncertainty in the words used in his or her statements, the market reacted very negatively. Investors seem to place a large weight on the analyst characteristics of forecast frequency and firm experience. This conclusion fits well with allied research on analyst characteristics that looked just at the numerical forecast (Jacob, Lys, and Neale, 1999; Mikhail, Walther, and Willis, 1997). The present study shows that the words that display certainty or uncertainty in the analyst statements provide incremental predictive ability in the market reaction, beyond that inferred from the numerical forecast.

Statements conveying activity of inactivity

As noted earlier in the chapter, market reaction was observed for low activity statements by analysts with more firm-specific and general experience convey in their statements. The investors pay attention, to the paucity of active words and the market reacts negatively. This result did not match the analysts' one-word (*Buy*, *Sell*, etc.) recommendation necessarily. Thus, additional information (above and beyond the numerical forecast) pertaining to the expected market reaction can be gleaned from the words in the accompanying analyst report.

Analyst word choice based on their characteristics and investment banking relationship

The relationship between analyst characteristics and their optimism for firms issuing equity and/or debt was compared to their optimism for firms that were repurchasing securities. The hypothesis was not supported, but there was a relationship in the opposite direction to that which was predicted. Extant research shows that investment-banking pressures (Ritter, 2003; Richardson and Sloan, 2003) may cause an analyst to display more optimism in the affiliated firms (Lin and McNichols, 1998). This study looked at the support for this thinking in the words that were used in the analyst statements. Interestingly, the more experienced analysts actually muted their optimism and used uncertain words for such affiliated firms. Analyst's pay is based, in part, on the reputation of the analyst (Stickel, 1992). Thus, experienced analysts seem to have less of incentive—rather, they have a disincentive as seen in the results of this study—to show any bias in the affiliated firms. Savvy investors would do well to avoid the pitfalls of falling for these forecast and recommendation biases. It would serve them well to pay more attention to the words in the accompanying analyst report. The words in the accompanying report seemed to deemphasize the enthusiasm in the forecast and recommendation. Sell-side analysts have long faced allegations that pressures to generate investment banking business compromise the soundness of their investment research. The allegations resulted in a large $1.4 billion settlement (Smith, Craig, and Solomon, 2003), even though, the evidence was largely restricted to anecdotes involving a small number of analysts. A comprehensive examination of the recommendations (Bradshaw, Richardson, and Sloan, 2003) provided evidence of the over-optimism by the analysts for firms that were current or potential investment banking candidates. The Bradshaw,

Richardson, and Sloan (2003) paper examined short-term earnings forecasts, long-term earnings forecasts, stock recommendations, and target prices. However, this study showed that if one scrutinizes the words that the analysts use in their reports, the optimism does not exist. Rather, the opposite is true. The analysts were muted or even pessimistic in their reports if words' usage is employed as the metric. Moreover, the analysts in this study use words conveying uncertainty in reports of affiliated firms, again counter, to the extant research noted above in this paragraph. An extension of this work could be to see if the counter bias in the words of the reports, counter to the one-word recommendation, is intentional or subconscious. "Word choice is considered as unimportant by many people, the least consequential of the complex decisions that people make when communicating with one another" (Hart, 2000: 35). Also, people have limited ability to monitor their language patterns (Hart, 2000). An extension of this work could be to explore if the analysts signal their discomfort with the bias towards affiliated firms knowingly or subconsciously.

No support of hypotheses relating to the use of active words and the timing of their bias in the reports was found. The reason for lack of support might be that analysts have already telescoped their desire with the use of pessimistic and uncertain words, and may not want to go overboard to make their desire known too overtly. This might result in tipping off the investors unintentionally, as well as incurring the wrath of the investment bankers, with the resultant lower bonuses or termination.

Word choice by the analysts did not seem to be related to the number of firms and industries that they followed. One reason could be that the word choices do not provide any incremental information to the investors. Another possibility could be that the

information related to the analysts may not be as accessible to investors. The analyst characteristics that the investors responded to were characteristics such as experience and forecast frequency. These characteristics may well satisfy the need by investors for an expansive understanding, which from the investors' perspective seems to be accomplished by the experience, especially the firm-specific experience, and the forecast frequency characteristics. In the same vein, the fact that the lagged forecast accuracy did not matter suggests that those same investors utilize other explanations and different mechanisms for evaluating an analyst statement.

Implications for Practice

There are broad implications for practice from the research covered in this study for affiliated firms' relations and investment management subjects. As stated above, research on the consequences of analysts' statements has generally ignored the examination of the characteristics of the words in the statements, beyond a consideration of the one-word recommendation. This research has answered the call to advance our understanding, in spite of limitations inherent in teasing out analyst intent. As stated by Previts, Bricker, Robinson, and Young in their research on analysts, "We acknowledge that there are constraints on our ability to rationalize the patterns of analysts' behavior. Continued attempts to increase our understanding will add to our knowledge in a capital market environment comprised of many different investors" (1994, p. 67)..

It is clear from this research that the characteristics of an analyst statement matter, and how those characteristics are expressed are vital in affecting capital market participants' expectations. The choice of words can have a profound legal and financial

implication for sell-side stock research companies. Parties that deal with investment management and investment-banking management may find the results from this study useful. Focused studies in these fields can explore and exploit practical implications of analysts' statements.

Limitations

Now I will cover the limitations that I see in this dissertation. First, I did not directly query investors as to the reason for their choices. Instead, I assumed that the investor choices would be reflected by what areas they would invest. I did so by using a model that expanded on the previously considered variables. I added additional variables that were not considered previously. Although my research incorporated previously omitted variables, there may be others I have not considered, however; and it is possible that I found relationships due to other spurious sources—namely, due to other unobserved variables.

A second limitation is the sample, which is restricted to statements by U.S.-based analysts with strong reputations. Also, firm size did have an impact on the influence of analysts' statements, and I undersampled small firms. Lack of available data makes consideration of smaller firms very difficult. "The variable quality of research between different houses (Central and Eastern European)…and across the different offices of the same company" (Capon, 1997, p. 30) raises issues that one would need to be cognizant of when researching non-U.S. companies. As a result of my focus on large U.S. companies, the generalizability of my findings will be limited.

A third limitation is associated with using analyst reports. The reports do not necessarily include all the information the analyst used to arrive at a recommendation. In all cases, however, I assume that the analyst used the information cited. Schipper states that "a necessary condition for inclusion in the report is inclusion in the decision process, so the report sets a lower bound in the information items analyzed" (1991, p. 120). I also do not know what sorts of information might have been useful to the analyst but were not available. This question is addressed by many studies that have surveyed analysts on their information needs (e.g., Baldwin and Rice, 1997).

A fourth limitation is that the content analysis method used in the study assumes that the relative proportions of categories of information reflect greater or lesser concern with the categories (Weber, 1990). If securities analysts issue reports that include extraneous information, the interpretations of those proportions may need to be modified. I assume that analysts prepare reports to produce efficient and effective communication of relevant information.

A fifth limitation of this study pertains to the generalizability of the findings beyond the time period (1995) covered. The business and the stock market environment are changing and the emphasis of different characteristics by investors to that in 1995 is possible. Such emphasis will undoubtedly change over time. An interesting extension of this study would be to find how the preference for certain characteristics' variables changes over time by conducting a longitudinal study. For example, Regulation FD, the repeal of the Glass-Steagall Act, and other such changes in the regulatory environment would likely change the preference of desirable characteristics over time.

A sixth limitation is the choices of words that fit within the categories in the content analyses software. The DICTION software reports normative data based on a 20,000-item sample of contemporary discourse. However, it might be possible that words that imply uncertainty, for instance, in the sample of this software not imply the same in the analyst language.

Directions for Future Research

I have detailed below some directions for future research. There are many avenues for further work in this area. During the study of over 700 analyst reports it occurred to me that the way the analysts and their reports are covered in the media would influence investors' expectations. Media reports often play out over a longer period and the dissection of the reports sometimes can create precipitous events themselves that investors would notice. Investors' opinions of analyst statements that are discussed in the media thus would shape the reactions of the investors beyond the event windows studied. We have all seen instances of analysts who promote a firm's stock while concurrently unloading their positions in the firm's stock. Future research may want to tie analyst statements to how the media portrays those statements.

One other avenue for further study would be the use of more elaborate ways to analyze what may be a more interwoven initial assessment of the statement characteristics by investors. Researchers could explore interaction effects, especially between the statement characteristics, the financing variables, and the analyst characteristics included in this study.

One could also develop a more complex profile of analyst statement characteristics. Specifically, one could imagine the creation of a new variable, "statement profile," that would be a composite of some or all of my independent variables. Investors' responses to such a composite variable could be more accurately predicted.

Another extension of this research would be to a different set of firms, either smaller firms or those based outside the United States. The world is becoming global, and cultural considerations might lead to different results in non-U.S. firm studies. Similar meaning words might carry different weights in other cultures. For example, a higher usage of optimistic words in a culture might be needed to elicit the same investor response expected in the U. S. Although this extension could prove interesting, it might be difficult to obtain data, especially for smaller firms.

An additional possibility is the analysis of the "body language" of analysts issuing statements and research into the influence on investors of such nonverbal cues. This study was limited to written reports. Do the same conclusions hold true for spoken statements?

Lastly, an interesting avenue would be to examine whether investors' initial expectations did actually turn out as they had envisioned. Abnormal returns signal that the value of the firm has gone up and the investor expectations are that the firm would generate increased earnings in the future. Does this actually turn out to be true?

Analysts' statements—reports issued and/or media interviews granted by analysts—provide an opportunity to assess the impact of analysts. In spite of a high level of interest and hundreds of studies, when it comes to analysts' statements, there is still a fair amount of equivocation and much needs to be studied (Ghosh and Whitecotton,

1997). In this study, I have added to the body of research on the reactions to analyst statements. However, much work still needs to be done. If I had obtained more significant results in this study, we could arrive at a more definitive understanding of analyst statements. However, the non-finding of significant relationships when such relationships were postulated is an important finding in itself and can lead to new directions in research and new practice implications.

FIGURE 1: Example of an analyst report

Industry: Telecommunications Services
April 18, 1995
TS0719 Frank J. Governali 207/780-6210

LDDS Communications, Inc.

LDDS

- Thirty percent earnings growth over next two years is achievable and has been clearly articulated by management.
- LDDS represents an excellent combination of strong management, outstanding growth, attractive track record, and sustainable differentiated position in the industry.
- While the fundamental nature of the company is changing following the IDB and WilTel mergers, we expect continued consistent and strong performance.
- Underlying fundamentals of the long distance business are attractive, and LDDS is one of the strongest operators within this attractive industry.
- Strong recent stock performance, combined with a well-communicated story to investors, leaves the stock fully discounting the attractive outlook. Thus, we initiate coverage with a Hold rating.

LDDS Communications, Inc.
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Stock Price Performance
Source: IDD Information Services/Tradeline

Closing Price

Daily: January 3, 1994 to April 17, 1995
Ldds
Communications
Inc Ga
10-Feb-94 29-Apr-94 18-Jul-94 4-Oct-94 21-Dec-94 9-Mar-95
14.50

17.00
19.50
22.00
24.50
27.00
29.50
14.50
17.00
19.50
22.00
24.50
27.00
29.50
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Opinion: Initiating Coverage with a HOLD.

Price Target Mkt. Value 52-Week
4/13/95[1] (Dec. 1995) Dividend Yield (Millions) Price Range
25 3/4 $28 — — $5,047.0 27–13
Annual Previous Abs. Relative Pretax Cash
EPS Est. P/E P/E Flow/Share
12/96E $1.80 14.3X 104% $6.06
12/95E 1.38 18.7 129 5.18
12/94A 1.05 24.5 134 2.25
Fiscal
March June September December Year End
1995E $0.28 $0.32 $0.38 $0.40 Dec. 31
1994A 0.23 0.26 0.28 0.28
Common Shares [2] 196 mil. **Relative P/E Range** —
Book Value/Share (12/94) [3] ($11.32) **Est. 5-Year EPS Growth** 22.6%
Return on Equity (12/94) NM **Est. 5-Year Dividend Growth** —
Debt/Total Capital (12/94) [4] 65% **Total Debt (12/94)**[4] $3.4 billions

[1] On 4/13/95 DJIA closed at 4208.2 and S&P 500 at 509.23.
[2] Reflects fully diluted shares outstanding; regular shares outstanding are 160 mil.
[3] Tangible book value. Estimated pro forma reflecting WilTel merger.
[4] Estimated pro forma reflecting WilTel merger.
NM = Not meaningful.

LDDS Communications, Inc.
3

Contents

Summary and Recommendation

LDDS Communications is the nation's fourth largest long distance carrier, with anticipated revenue of $3.7 billion in 1995. It operates its own 11,000-mile digital fiber optic network and resells the capacity of other carriers outside its network reach. Formed in 1983, and based in Jackson, Mississippi, LDDS has grown rapidly through internal sources and acquisitions. In 1994, the company leapt into the big leagues through its $2.5 billion cash acquisition of WilTel and its $700 million stock swap for IDB Communications, giving it a domestic network with an international reach.

The company's strategy has been, and will continue to be, to focus on the low-end business market. While its horizons have expanded with recent mergers, looking upward to large business customers, it still plans to differentiate itself from the larger carriers by specializing in the needs of small business. It is largely absent from the hotly contested residential market segment. In the more competitive new world of telecom, where bundling and cross-selling of services will be more important, LDDS is well suited for the opportunity. We anticipate a five-year growth rate for LDDS of about 26% per year in earnings, with free cash flow expanding at approximately the same rate.

We rate LDDS a Hold owing to its strong fundamental position but equally strong recent price performance, which has pushed its valuation back to reasonable levels. We view LDDS as a fundamentally attractive company, with above average growth and profitability. It has a differentiated strategy that we think can be executed successfully by current management. Valuation measures compared to the market and to other long distance carriers suggest the stock is at fair value and should perform in line with the overall stock market. On a year-to-date basis, the stock is up 33%. Our yearend 1995 price target is $28. This price target is supported by comparative P/Es, P/E to growth rate, and market capitalization to revenue comparisons.

Short Review of Key Issues

Established Track Record Management has effectively produced a solid track record of accomplishments, growing revenues from internal sources and through acquisitions. As our analysis will show, while doing this, the company has successfully expanded margins and improved profitability beyond that achieved by other long distance companies. The company has nearly tripled revenues since 1991 and more than tripled net income in the same period.

Strong Earnings Outlook We expect that LDDS will be able to expand earnings over the next couple of years at a 30% rate (off the $1.05 1994 base) and over the next five years at a 23% compounded annual rate. This should be driven by five-year revenue growth of 14% and free cash flow growth of 24%.

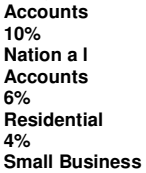
WilTel and IDB Acquisitions The company appears well on it's way toward the successful integration of its two most recent and significant acquisitions, WilTel and IDB. These two companies essentially transform the company from the nation's largest regional long distance company to the nation's smallest national long distance company. The definition of its new role is not as important as its competitive position within its new context. We are convinced the company retains a strong competitive position versus its larger national carrier competitors, even as it faces the important challenge of integrating the acquisitions of IDB and WilTel. With WilTel, LDDS gets a nationwide fiber optic network, which will lower its line costs by now allowing the company to transmit most of its traffic over its own facilities. With IDB, it obtains an international networking capability that gives it direct operating agreements with 59 countries, which represent 80% of outbound U.S. traffic. This gives LDDS the ability to receive return traffic and to market itself as a full service operator. The combination of the networking infrastructure, with the marketing skills LDDS has honed over the years, should keep the company in good stead as it faces increasing industry competition.

Ability to Compete Successfully LDDS has historically focused on the low-end business market for its source of growth. As Chart 1 demonstrates, the company has 80% of its business in the small business sector and is, to a large degree, avoiding the

rough and tumble competition of the residential and national accounts market. Continued success for LDDS will be driven by its ability to satisfy customers in the small business arena, in the same way it has done this historically. We believe this can be achieved even as the size of the average customer's bill rises. LDDS will continue to use direct marketing to service its customers. This is a major differentiating factor for the company, since the larger players simply cannot afford direct contact with customers that generate less than $1,000 per month in revenues.

Long-Term Strategy The company's long-term strategy is to continue saturating the low end of the business market with its direct-marketing approaches, along with superior customer service. It will continue to avoid a high concentration on the national accounts and residential market segments. In addition, the potential for additional acquisitions exists, although there are increasingly fewer attractive candidates. Finally, the company plans to generate strong earnings growth over the next couple of years simply by exploiting the synergies that should be available in its mergers with WilTel and IDB. The company has identified total synergy benefits of $0.16-0.17 per share per year through these mergers. This is comprised of the $0.05 per share gain from IDB, $0.07 per share from WilTel, and an additional $0.04-0.05 per share for the combination of the three companies together. Acquisitions have been an important part of the LDDS growth strategy. This element of the long-term strategy is still important, but the potential incremental growth from acquisitions is smaller, since there are clearly fewer companies available to purchase. In its guidance for 30% growth in 1995 and 1996, management was not assuming any contribution from new acquisitions. LDDS' acquisition policy requires that mergers become accretive to earnings in very short order. As CEO Bernard Ebbers declares: If LDDS can find acquisitions that contribute to earnings, it will be active on the acquisition trail.

Chart 1
1994 Revenue Composition



80%

LDDS Communications, Inc.

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Valuation Approaches Long distance stocks are primarily driven by P/E valuation approaches, with cash flow multiples and market cap to revenue comparisons also being important comparative tools. As Table 1 reflects, LDDS' 1995 P/E multiple of 18.7 is higher than the group average, but its P/E relative to its growth rate is not out of line. Looking at valuation on the basis of revenues, which is appropriate in industries where bottom-line margins will converge over time, makes sense. In this situation, the market cap to 1995 estimated revenue comparison for LDDS of 2.0 is again in line with the faster growth companies and higher than the slower-growth larger companies. Our price target of $28 by year-end is based on our expectation that the company will achieve the 30% growth rate it is targeting in 1995 and 1996.

Table 1
Comparative Valuation Data

LDDS ALC LCI ACC AT&T Sprint MCI
Price:
4/13/95 $25.75 $38.25 $25.88 $16.19 $51.38 $32.13 $22.00
52-week range 27 - 14 38 - 26 27 - 13 26 - 13 57 - 47 40 - 26 28 - 1 7
Earnings per Share:
1993A $0.85 $1.07 $0.34 $0.24 $2.59 $1.99 $1.28
1994A 1.05 1.68 0.99 (1.60) 3.13 2.47 1.47
1995E 1.38 2.04 1.20 (0.70) 3.53 2.70 1.55
1996E 1.80 2.46 1.54 NA 4.05 3.00 1.70
5-YrEPSCAGR(1989-1994normalized) 51.9% -169.4% -214.6% -240.7% 4.6% 7.5% 4.9%
5-YrEPSCAGR(1989-1994asreported) 25.3% -170.1% -157.0% -240.7% 3.8% 8.2% 4.9%
5-YrProjectedEPSGrowthRate 22% 18% 24% 15% 12% 10% 10%
Historical P/E Range
1993A 24.9 - 30.9 11.7 - 28.7 29.4 - 62..1 44.8 - 90.6 19.6 - 25.0 12.8 - 19.8 14.8 - 23.1
1994A 14.2 - 27.9 16.4 - 22.7 13.6 - 27.0 (8.1)-(15.9) 15.1 - 18.1 10.9 - 16.2 12.2 - 19.4
P/E
1995E 18.7 18.8 21.6 (23.1) 14.6 11.9 14.2
1996E 14.3 15.5 16.8 NA 12.7 10.7 12.9
Operating Cash Flow ($in millions)
1993A $2.33 $2.48 $4.62 $1.00 $6.89 $8.45 $4.14
1994A $2.25 $3.68 $2.94 $0.40 $7.69 $9.36 $3.98
1995E $5.18 $4.31 $3.88 $1.80 $9.06 $10.38 $4.56
1996E $6.06 $5.04 $4.89 $3.61 $9.91 $11.42 $5.24
Historical OCF Multiple Range
1992A 11.6 - 18.8 3.8 - 8.3 - 8.1 - 12.5 6.8 - 9.1 3.3 - 3.8 5.4 - 6.8
1993A 11.0 - 13.2 6.1 - 13.4 3.2 - 5.6 11.0 - 22.0 9.6 - 11.6 4.7 - 6.4 5.7 - 8.2
1994A 5.6 - 9.5 7.9 - 10.8 6.0 - 10.5 43.3 - 74.1 8.1 - 9.4 4.4 - 5.8 4.8 - 7.5
OCF Multiple
1995E 8.3 9.7 9.0 11.3 7.3 4.4 5.1
1996E 7.1 8.3 7.2 5.6 6.7 4.0 4.4
Adjusted Market Cap / Revenues
1993A 7.4 3.2 3.0 1.3 1.5 1.4 1.3
1994A 4.9 2.5 2.2 1.1 1.4 1.3 1.2
1995E 2.3 2.1 1.7 0.7 1.3 1.1 1.1
1996E 1.9 1.7 1.4 0.5 1.1 1.0 1.0
P/E to Earnings Growth Rate
1995E 0.8 1.0 0.9 (1.5) 1.2 1.2 1.4
1996E 0.7 0.8 0.7 NA 1.1 1.1 1.3
OCF Multiple / OCF Growth Rate
1995E 0.4 0.5 0.4 0.8 0.6 0.4 0.5
1996E 0.3 0.5 0.3 0.4 0.6 0.4 0.4

Note: Estimates of earnings and growth rates for ALC, LCI, and ACC reflect consensus estimates from and information gleaned from discussions with

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Expansion of Key Issues

Company History

LDDS has flourished through a variety of notable acquisitions. In 1989, the company acquired long distance operations in St. Louis, Kansas City, Tennessee, Kentucky and Texas through the acquisition of Inter-Comm. Advantage Companies, Inc. The addition of Mercury, Inc. and TelaMarketing Corp. in 1990 extended LDDS' reach into Louisiana. Mercury was a reseller with annual revenues of $15 million and TelaMarketing was a long distance company with revenues of close to $22 million from its business in Louisiana, Mississippi, Alabama and Florida.

Nineteen ninety-one was a year of further expansion. The first acquisition of the year was National Telecommunications, a reseller of long distance services mainly in Texas but branching into Arkansas, Oklahoma, Colorado, New Mexico and Arizona as well. With yearly revenues of nearly $35 million, this acquisition gave LDDS a strong operational base in its first Southwestern state. The next purchase in 1991 was Phone America of Carolina, which gave LDDS a strong complement to its already-existing business in the Southeast as Phone America provided a $16 million long distance resale business in the Carolinas and Tennessee. To finish out the year, LDDS took over the business of MidAmerican Communications Corporation, a supplier of long distance in Nebraska, Missouri, Kansas, Illinois and Arizona. This was the company's largest acquisition yet as MidAmerican generated annual revenues of approximately $75 million.

In 1992, LDDS continued its expansion into the Southwest through the acquisitions of Prime Telecommunications, Shared Use Network Systems, Inc., and Automated Communications. These additions strengthened the company's presence in Arizona, Colorado and New Mexico, as well as added two new states, Nevada and Utah. In December, the company merged with Advanced Telecommunications Corporation (ATC). ATC produced $400 million in revenues per year by providing long distance service in 26 southern states.

This merger clinched the number four ranking for LDDS among long distance carriers. TeleMarketing Investments was the final acquisition for the year. The company provided long distance service in Ohio, Nebraska and Iowa with approximately $24 million in revenues.

The acquisitions of Dial-Net and Touch 1 Long Distance were finalized in 1993. They contributed approximately $80 and $30 million in revenues, respectively, and added services in the midwestern and northwestern states and refortified the southeastern states. Metromedia Communications Corporation and Resurgens Communications Group, Inc. were merged into LDDS on September 15, 1993, which helped to expand annual revenues from $800 million in 1992 to $1,145 million in 1993. The areas of concentration for these two companies were in the Northeast and Southeast. Of course, the big acquisitions, which we discuss below, were IDB and WilTel in 1994 (WilTel actually closed in January 1995). These two additions were different from all others in that they changed the basic nature of the company. These acquisitions not only expand the geographical reach and add revenues (as all other previous acquisitions had done), but they take LDDS into new market segments and change the basic operations of the company. Responding to this momentous change, LDDS also plans a name change to LDDS WorldCom to better reflect its new global presence. WorldCom is a name that has been in the international long distance market for many years, first as an international record carrier, and then as a full private line voice and data company eventually owned by IDB.

Company Management

LDDS is fortunate to be led by an experienced crew of managers who have put in their years in the industry both at LDDS and other leading companies. Bernard Ebbers leads the team and remains the company's chief spokesman to the financial community. The renowned John Kluge is chairman of the company and holds this non-executive position by virtue of his company's merger into LDDS, through which he gained his 16% stake and became the company's largest shareholder. A short review of the top three managers' backgrounds follows.

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Bernard J. Ebbers—President and CEO, LDDS Communications It was 1983 when Bernard Ebbers made an investment in LDDS and it was in 1985, when the company was fighting off bankruptcy, that he took over as chief executive officer. Ebbers was born in Edmonton, Alberta, and moved to the United States to attend Mississippi College. Prior to joining LDDS (then called Long Distance Discount

Service), Ebbers ran a chain of Best Western motels in Mississippi. Ebbers has served as president and chief executive officer since April 1985. He remains the head cheerleader of its troops and the chief strategist of its game plan.

Roy A. Wilkens—WilTel President and CEO Roy Wilkens started WilTel as a subsidiary of Williams Pipeline Company in 1985. He was chairman of the National Telecommunications Network in 1988 and served a one-year term as chairman of CompTel in 1991. In 1992, he was appointed as a member of the National Security Telecommunications Advisory Council by President George Bush. Today, Wilkens serves as president and chief executive officer of WilTel, a wholly owned subsidiary of LDDS, as well as a member of the board of directors of LDDS. Wilkens will be responsible for all wholesale activities for LDDS, both domestically and internationally, as well as network planning, engineering and MIS.

Gregory A. LeVert—President, Communication Services Greg LeVert joined LDDS as president of Communication Services in December 1994. Prior to his appointment at LDDS, he spent five years at MCI as president of MCI Global Accounts, president of MCI Central Division, and vice president of MCI National Accounts Marketing. In the 20 years before his career at MCI, LeVert was vice president and regional manager of Xerox Corporation's southern region and spent time as national manager of sales and training and development. LeVert was recently appointed as a member of LDDS' board of directors.

Chart 2
1994 Pro Forma Revenue Composition
Commercial
48%
Wholesale
25%
Private e Lin e
17%
Residential
4%
Op orator
6%

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Company Operations

LDDS primarily serves small to medium-sized businesses that generate up to $5,000 a month in revenues. This market represents about 70% of LDDS' business. LDDS' largest business markets

are in Florida, Texas, California and New York.
As Chart 2 shows, LDDS' revenues on a pro forma basis, including those of WilTel and IDB, will be comprised of the following segments: residential 4-5%; commercial 47-48%; wholesale 25%; private lines 17%; and operator services 6%. The highest growth sector at LDDS is the wholesale (carrier) business in the 20-25% range, with other segments growing in the 10-20% range.
To support its operations, the company has over 160 offices serving customers nationwide. Part of LDDS' strategy lies in the practice of keeping deep roots in its local and regional operating areas. Within each operating region, each state preserves its own sales, customer service, and technical support staff. This gives LDDS the opportunity to provide its customers with a sense of local affiliation, while at the same time offering nationwide long distance service and direct-dial access to more than 220 foreign countries. LDDS' 800 services are available in all 50 states, Canada, and parts of the Caribbean, while international toll-free services are accessible from more than 50 countries.
In general, LDDS' rates are designed to be lower than AT&T's yet competitive with all other long-distance carriers. However, this is always subject to change based upon the adjustments that AT&T and other long distance carriers may make. AT&T's recent 2.9% price hike in the low end of the business segment is a very positive development for LDDS, since AT&T's offsetting price reductions on the consumer side essentially don't affect the company.

Successful Integration of Acquired Companies

LDDS has put together a rather remarkable track record of successfully buying companies and capitalizing on the new growth opportunities. LDDS did not so much merge its acquisitions into its existing businesses as much as it added the new additions to its "confederation" of companies. In this way, the company retained the identity and entrepreneurial spirit of its new acquisitions and minimized the disruption to customer relationships. Its primary billing system, designed and operated by EDS, is flexible enough to handle all the new additions, as well as to respond to pricing changes that were inevitable.
LDDS also managed to successfully acquire its new companies at attractive prices that allowed it to achieve its goal of doing only accretive acquisitions. Not many companies can make this claim.
In the case of IDB and WilTel, LDDS is retaining some of the elements of its historical acquisition

policies, but in other respects is venturing in new directions. The similarity is that LDDS is trying to avoid disrupting customer relationships as much as possible and retain as much management and sales staff as makes sense. The differences are also significant. In the case of IDB, the company lacked strong operating and financial management, so this element of the operation is clearly being subsumed into LDDS. In addition, because of the significant opportunity for synergies, the integration of IDB's, WilTel's, and LDDS' network operations were put on a fast track. WilTel will retain a greater share of its independence it seems, even retaining its brand name, in order to avoid any carrier reaction against buying services from LDDS, a potential competitor. In addition, the fact that WilTel's president, Roy Wilkens, is assuming one of the top three spots at LDDS is a sure sign that WilTel won't fade into the woodwork.

Given LDDS' track record in acquisitions and its knack for identifying and fixing problems early, we are optimistic about the company's ability to capitalize on the potential available from the IDB and WilTel transactions.

Historical Earnings and Profit Comparisons with Other Companies

LDDS' historical operating and financial performance, compared with other long distance carriers, is the best indication of its past success and the potential for its future performance. Charts 3 through 5 give a good snapshot view of the company's relative performance versus its peers. The comparative margin analysis in Chart 3 looks at LDDS on a pre-merger basis over the past three years. At this point, it doesn't make any sense to compare it on a post-merger basis, since the historical restatements wouldn't reflect any of the expected synergies, and instead would reflect the weak operating performance of IDB. We have not included AT&T in the

comparisons because it does not disclose its depreciation and operating expenses for its long distance unit.

Chart 3 shows that LDDS has consistently produced higher operating margins than any company in the group, and enjoys the second best improvement in operating margins over the past three years. As this chart shows, LDDS' superior performance is the result of lower SG&A and depreciation. On the other hand, since it historically has not been a

facilities-based carrier, its telecommunications costs were higher than any company in the group. This, of course, was more than offset by the savings in other areas. The actual operating margin in this three-year period rose from 14.8% to 18.0%.

Chart 4 reflects the company's strong performance from another perspective. It demonstrates that although LDDS' growth rates in revenue and operating income are no longer the highest in the industry, they still are much larger than the bigger carriers, and certainly competitive with the smaller ones. Over this period, LDDS has grown revenues by 113% and operating income by 160%, which contributed to the improvement in operating margin described above. Chart 5 shows that LDDS expanded operating income by 42% in 1992, 68% in 1993, and 55% in 1994. Again, ALC and LCI managed to beat these figures because of lower bases of earnings and weaker margin levels.

Chart 3

Comparative Margin Analysis

LDDS is presented on a stand-alone pre-merger basis

0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
1992 1993 1994 1992 1993 1994 1992 1993 1994 1992 1993 1994 1992 1993 1994
LDDS ALC LCI MC I Sprint
Telco
Expenses
SG&A
Depreciation
Operating
Income

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Chart 4

Income Statement Composition

$ in millions, LDDS is presented on a stand-alone pre-merger basis

AAAA

LDDS
$ 0
$ 1 0 0
$ 2 0 0
$ 3 0 0
$ 4 0 0
$ 5 0 0
$ 6 0 0
$ 7 0 0
$ 8 0 0
$ 9 0 0
$ 1 , 0 0 0
$ 1 , 1 0 0

$1,200
$1,300
$1,400
$1,500
$1,600
$1,700
$1,800
RevenuesTelco
Expenses
S G & A Depreciation Operating
Income
$ in millions
1992
1993
AAAA
AAAA
1994
LCI
$0
$50
$100
$150
$200
$250
$300
$350
$400
$450
$500
RevenuesTelco Expenses SG&A Depreciation Operating Income
$ in millions
1992
1993
AAAA
AAAA
1994
ALC
$0
$50
$100
$150
$200
$250
$300
$350
$400
$450
$500
$550
$600
RevenuesTelco Expenses SG&A Depreciation Operating Income $ in millions
1992
1993
AAAA
AAAA

1 9 9 4
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Chart 4
Income Statement Composition continued
S pr in t - Long Distance
$ 0
$ 5 0 0
$ 1 ,0 0 0
$ 1 ,5 0 0
$ 2 ,0 0 0
$ 2 ,5 0 0
$ 3 ,0 0 0
$ 3 ,5 0 0
$ 4 ,0 0 0
$ 4 ,5 0 0
$ 5 ,0 0 0
$ 5 ,5 0 0
$ 6 ,0 0 0
$ 6 ,5 0 0
$ 7 ,0 0 0
R e v en u es T e l co
E x p en s es
S G& A Depreciation Operating
Income
$ in millions
1992
1993
1994
M CI
$ 0
$ 1 ,0 0 0
$ 2 ,0 0 0
$ 3 ,0 0 0
$ 4 ,0 0 0
$ 5 ,0 0 0
$ 6 ,0 0 0
$ 7 ,0 0 0
$ 8 ,0 0 0
$ 9 ,0 0 0
$ 1 0 ,0 0 0
$ 1 1 ,0 0 0
$ 1 2 ,0 0 0
$ 1 3 ,0 0 0
$ 1 4 ,0 0 0
Revenues T e l co
Expenses
S G&A Depreciation Operating
Income
$ in millions
1992
1993
1994
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Chart 5
% Change in Operating Income
LDDS is presented on a stand-alone pre-merger basis
4 2%
7 1%
3 4%
1 1%
5%
6 8% 6 9%
9 6%
5%
6 1%
5 5% 5 4%
4 6%
1 5%
2 1%
0%
1 0%
2 0%
3 0%

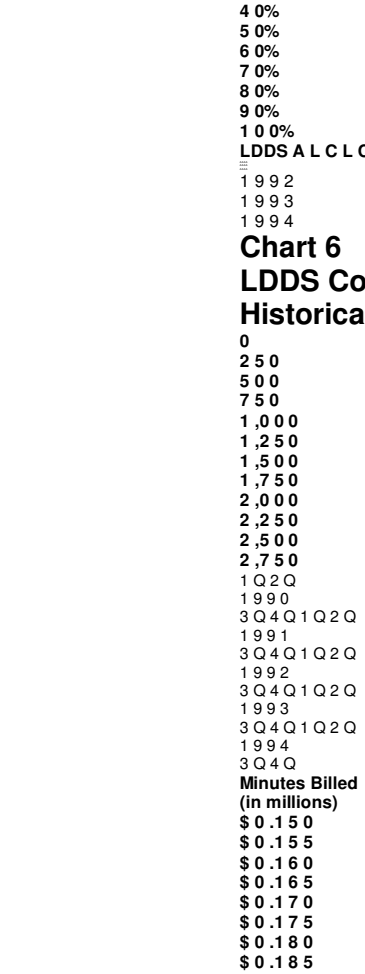

Chart 6
LDDS Communications
Historical Revenue and Volume Data

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How Has LDDS Exceeded Industry Norms for Growth and Profitability? We think it comes down to several factors. First, LDDS focuses on that part of the industry where growth is the highest. The low end of the business market is expanding volumes currently at around 15%, much higher than the industry average of only 9.4%. Second, the company has profitably acquired growth externally, which has leveraged it strong internal growth rate. The combination of internal and external growth has propelled the 40% compounded annual billed minutes growth over the last four years. Revenue growth has lagged, of course, as the mix of business has changed. But, as Chart 6 shows, revenue per minute has remained within a tight range since mid-1991. The precipitous decline in revenue per minute since 1990 is a function of changing business mix and lower

transmission costs. If this had not occurred, the company would have been able to generate the margin gains and bottom-line growth of the last three years.

A third explanation for LDDS' strong performance is a simple one: it clearly runs a tighter ship than the standard long distance company. This is evident in its lower SG&A level, reflecting low customer acquisition costs and low customer churn. It is also evident in efficient network operations, the fourth area of advantage. LDDS has been very successful in obtaining low-cost transmission capacity. Being the largest reseller in the industry (for example, LDDS is MCI's largest customer), LDDS has been able to negotiate very low-cost contracts.

The follow-up question, of course, is, Will this industry leading position last? As a facilities-based carrier, LDDS will face different challenges and different opportunities, but we think it will be equally successful in the future, as we describe later in this report.

The WilTel Acquisition

On August 22, 1994, LDDS announced that it would acquire WilTel, a subsidiary of The Williams Companies. Under the terms of the agreement, LDDS acquired WilTel's network services operations for $2.5 billion in cash. WilTel provides private line (data, voice and video) and switched long distance products and services through two business units, WilTel U.S. and WilTel International. A third unit, WilTel Undersea Cable, has been formed specifically for construction of an undersea cable between the United States and Cuba. The domestic operations are comprised of 11,000 miles of fiber optic cable and digital microwave facilities, making it the fourth largest nationwide network. Including network sharing and leasing, WilTel has access to an additional 30,000 miles of network facilities and the capability of reaching virtually all major U.S. cities.

In 1993, one-third of WilTel U.S.'s income was derived from its switched services (a comparable figure is not available for 1994). WilTel entered this market in 1991 by offering facilities for resale to other carriers. The contracts WilTel signed with these resellers have one- to five-year lives. WilTel also offers its products, services and switching directly to commercial customers, but this is a much smaller part of its business. WilTel also operated Vyvx, which carries video traffic on the WilTel network. This specialized business will stay with

Williams Companies, but WilTel will continue to be the underlying network for the service.
WilTel has been a leader in the introduction of high-speed, high-capacity network services. WilTel was the first carrier to offer a public frame relay service under the name of WilPak. The product was introduced a full year ahead of any of the company's major carrier competitors. In late 1993, the company became the first carrier to offer nationwide ATM service. WilTel distinguished itself early in its formation by initially using decommissioned gas pipelines for its network rights of way. By pulling the fiber through pipelines, WilTel was able to avoid the risk of cable cuts, which at that time was dogging the larger carriers. Thus, it developed its early identity as a very secure network provider, not subject to the typical fiber-cuts. Today, at least 32% of WilTel's fiber network is installed in decommissioned pipelines. In 1986, WilTel was recognized by the National Society of Professional Engineers as one of the "Outstanding Engineering Achievements" because of this technique. The rest of WilTel's cables are buried along secured rights of way that are subject to continuous ground and aerial monitoring and control. To maintain its differentiation, WilTel buries non-pipe fiber at least 40 inches in the ground, substantially deeper than the industry standard.

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To finance the acquisition of WilTel, LDDS received commercial bank commitments totaling $3.41 billion, which are being used not only to finance the acquisition but to refinance LDDS' existing credit facilities and fund working capital. The lending facility is actually in two parts. Facility A is a $2.16 billion, six-year revolving credit facility, and Facility B is a $1.25 billion, two-year term facility. Quarterly payments on Facility A will begin on September 30, 1996, with the final installment due December 31, 2000. Facility B will mature with only one payment on December 31, 1996. These facilities will be unsecured and require compliance with specific financial and operating covenants, including the prohibition of paying shareholders' cash dividends without the prior approval of the banks. The acquisition of WilTel was completed on January 5, 1995.

Acquisition of IDB Communications Group

On December 30, 1994, LDDS completed its $700 million pooling of interest with IDB Communications. IDB, based in Culver City,

California, provides broadcast transmission and international private line and switched services on a wholesale basis. It has 160 private line agreements and 59 switched voice agreements with telephone companies around the world. LDDS managed to buy IDB after the company failed to adequately follow normal accounting practices, lost its accountants, and was forced to restate previous results. This episode sent the stock tumbling and essentially forced management to sell the company. The fire-sale price LDDS was able to negotiate reflects this turn of events, as well as the hefty reserves LDDS took to ensure the elimination of any residual IDB problems.

According to the terms of the merger, each outstanding share of IDB common stock, $0.01 par value per share, was converted into the right to receive 0.476879 of a share of LDDS common stock, $0.01 par value. Simply put, LDDS issued 35,881,087 shares of LDDS Communications for all of the outstanding shares of IDB common stock. Upon effectiveness of the merger, each unexercised IDB option, exercisable for an IDB common share, became exercisable for shares of LDDS. However, the conversion ratio is proportionately different than it was for shares of IDB.

The $195.5 million in convertible subordinated notes issued by IDB will remain outstanding, and the note-holders will receive the corresponding exchange ratio adjustment to their common stock conversion price. These convert into about 5.1 million LDDS shares at $38 per share.

Pre-merger, IDB provided international private line and switched services to most of the important countries (relative to U.S. telephone traffic) in the world. In addition, it provided broadcast services over leased satellite transponders and resold mobile satellite services. Finally, IDB also sold systems for fixed and mobile satellite transmission. At year-end 1993, IDB was the fourth largest provider of international long-distance calls in the United States and the second largest U.S.-based provider of international private line telephone service in the world. In 1993 alone, IDB WorldCom experienced 363% growth in minutes through the acquisition of TRT Communications and WorldCom Europe. The company's minutes of long distance use more than doubled in 1993, with 279 million minutes reported versus 128 million in 1992. (Although, as LDDS describes it, much of this traffic was unprofitable because management did not know its costs. Therefore,

LDDS plans to slow the growth, but make it profitable.) IDB was both an important LDDS customer and an international facilities supplier to WilTel, which included assisting WilTel in expanding its European data services.

Integration of IDB and WilTel, and Sources of Synergy

Management sees the integration of IDB and WilTel as a rather easy transition. As management describes it, integrating IDB requires simply rerouting traffic generated on the domestic network over the IDB international network. IDB has direct switched service agreements with 59 countries. Since the top 20 countries represent 72% of all U.S. international traffic, the company is obviously already well positioned to exploit the international opportunity.

WilTel is a little different. WilTel management is still running the operation, and the company is still conducting business as usual, except for exiting the commercial sector. WilTel still is predominantly a wholesaler of capacity to resellers and most importantly to LDDS. In fact, the WilTel brand name will remain, at least for the immediate future, in order to avoid disrupting relationships with other long distance carriers that would prefer not being perceived as reselling LDDS' service to customers. WilTel salesmen who had been focused on the commercial sector have been reassigned to the LDDS commercial accounts effort. The full transition of the employees and the network will take four to six months. By transitioning the LDDS traffic onto the WilTel network, and achieving economies in sales, marketing and MIS, LDDS expects to save $100 million annually, half of this amount coming from network costs ($4 million a year in system costs alone is planned to be saved). *Another $30-40 million will be saved from the merger with IDB, mostly from the utilization of IDB's international facilities.*

One-time costs of completing the IDB merger were taken in the fourth quarter of 1994. In addition, a one-time $76 million charge to settle shareholder suits was taken in the third quarter. As Table 2 shows, $130 million in pretax charges were taken in the quarter for a variety of items associated with the IDB merger. This amount is significantly higher than management originally anticipated. One reason for the excess is that the company appears to be

more aggressive in cleaning up IDB's accounting, and also more aggressive in eliminating unprofitable customers and network service providers. A second reason for the steep charges, in our opinion, is management's desire to eliminate any risk that they've under-reserved. Thus, we doubt there is much, if any, risk that the IDB merger creates negative surprises during 1995. More than ample reserves appear to have been taken.

Unlike the IDB merger, the WilTel acquisition, which is a purchase of assets, presents no risk of charges. No restatements will occur because the company has adjusted the asset values that it purchased from WilTel, with any excess value being assigned to intangibles. The three companies—IDB, WilTel and LDDS—will be run as an integrated entity. The two basic businesses that LDDS will be in, carrier and retail, have been organized to cut across each of the three companies' traditional lines of business.

Table 2
IDB Related Fourth Quarter One-Time Charges

$ in thousands

Restructuring Costs	
Severances	$18,702
Duplicate facilities/unfavorable leases	11,050
Litigation reserve	8,000
Write-off business segment	2,423
Other restructuring costs	2,940
Miscellaneous balance sheet	589
	43,704
Direct Merger Costs	
Investment banking/SEC/proxy	12,027
Accounting and legal	2,784
Other	191
	15,002
Unusual Charges	
Line costs:	
Line cost accruals	14,163
	14,163
Selling, General and Administrative	
Accounts receivable reserves	22,866
Broadcast write-down	13,500
Investment write-downs	10,633
Tax exposures—balance sheet	5,208
Write-down aeronautical equipment	5,000
All other	353
	57,560
Total	$130,429

Cost Savings from Merger Management has indicated that costs savings of $130-140 million is achievable in its merger with IDB and WilTel. The sources of the savings are in both the networking area and the SG&A area. The networking side will see benefits from the reduction of leased line costs, as LDDS traffic is transitioned onto the WilTel network. In

addition, access to the local telephone companies can become more efficient by using the access arrangements of both LDDS and WilTel. On the international side, utilization of the IDB network lowers transmission costs both in the private line and switched services arena.

Corporate overhead savings are simply the result of cutting back redundant operations among all three companies.

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How Will LDDS Compete Against the Big Boys?

LDDS will be pursuing its same business strategies, with some modification. It will continue to go after the residential market segment very conservatively, using an outside telemarketing vendor. This keeps costs low and makes the market segment profitable for LDDS. The low end of the business market will also be addressed in much the same way as it has been in the past. With the WilTel network and IDB's international connections, there should be new capacity to create and bundle services that even small businesses buy. So, there could be enhanced competitiveness in an already-strong market segment.

The company plans to move up somewhat into what it calls major accounts. This is a departure for LDDS. It is planning to undertake this effort in order to truly capitalize the full capabilities it now possesses. The aim is to market to this segment by using direct sales and a lot of hand holding. This will differentiate it from the larger carriers in the same way it has cemented a strong position among smaller customers.

While LDDS inevitably will face stiffer competition as it moves up the food chain to larger customers, and also as it becomes a larger national competitor itself, we believe it can be successful. We expect LDDS to retain its strong competitive position by continuing to emphasize the same talents and capabilities that has provided it with such success in the past. Almost by definition, the market segments it addresses are less competitive than most. It has a differentiated marketing strategy that the largest long distance carriers can't replicate. It has an excellent cost structure. And, it has an entrepreneurial management team that moves quickly and intelligently to capitalize on opportunities. With these ingredients, we think LDDS can continue to do very well against the "big boys."

Business Composition

With the acquisition of WilTel and IDB, LDDS has greater opportunities to do things in the market than ever before. The expectation is that the business composition will change significantly over time, as will the company's basic strategy. As Chart 2 demonstrates, the business composition of LDDS changes substantially with the two mergers, and the growth opportunity will change as well.

The company is trying to change this further by expanding the international component, which would be very profitable with very high revenue minutes. One way of capturing this potential is by putting international sales specialists in the system. LDDS will try to achieve the industry norm in terms of international sales as a percent of total revenues. Prior to the IDB purchase, international was only 2.8% of total minutes and provided about 11% of revenue. But the industry average is double digit on minutes and close to 20% in revenues. IDB will help here. With IDB international, minutes now equal 5.7% of the total and 15-16% of total revenues.

The bulk of international business will continue to come from carrier traffic because that is what the composition is today. But as time goes on, LDDS will seek to grow the business off the expanding domestic base of customers.

The switched services market is comprised of residential, commercial, carrier and operator services. The expected minutes growth is 11-12% per year.

The private line business is comprised of sales from both WilTel and IDB. This business is driven by the addition of line installations. Because of IDB's strong number two position globally, its growth there is basically in line with the market in the mid single-digit area. In the domestic marketplace, line growth is higher and should allow growth in the 10-12% range. Combined, total private line growth should be in the 10-11% range.

Residential Market

Today about 4% of total revenues comes from residential customers. As a percent of total revenues, LDDS does not expect to see this figure expand. In fact, over half of all the company's present residential customers are furnished to LDDS through a third-party marketing agent called Touch 1. Once Touch 1 secures a certain number of customers, the accounts are turned over to LDDS. LDDS services the accounts under a three-year management contract, for which it receives a fee. Residential customers are useful for carriers to fill up underutilized

network facilities in the evening. However, expanding into the residential business has its costs as well. For LDDS, the expectation is that sufficient growth and opportunity exists in the small- to medium-sized business market to make the residential market less attractive. The residential market is

the focus of intense mass-market competition between the larger long distance carriers. It is questionable whether LDDS could be equally successful in this segment, as it has been in the business sector, since differentiating its offering would be much more difficult. Thus, for the time being, and the foreseeable future, LDDS has no designs on expanding its residential presence.

Given the company's current position in the market, and the utilization of a third-party marketing agent, one might think low growth is expected. However, we anticipate revenue growth in the residential market, off a relatively small base in the range of 8-10%. This is based on the assumption that the company will continue to utilize aggressive third-party marketing agents, which allow growth slightly ahead of the market overall.

Commercial Sector

The commercial side of the long distance market is comprised of small businesses, major accounts and national accounts. The company has focused almost entirely on the small business sector, but now plans to expand into the major account area. National accounts is not an area of interest because of the intense competition and because of the commanding presence of AT&T and MCI in this segment. We anticipate that LDDS should be able to grow its revenues in the commercial sector by upward of 11% annually, based upon expectations for strong industry growth in this area, with minimal price erosion.

Small Business Market

LDDS defines its small business market as customers generating under $1,000 per month in revenues. In this market segment, there are currently 1,428 sales reps, but there are plans to expand this number. Turnover in sales reps is typically quite high in the business, and this was a problem for the company in 1994 after completing the Metromedia acquisition.

In this market segment, LDDS is most differentiated from the larger carriers. Using a direct sales force to address this market is a strategy in which the larger

carriers will most likely never indulge. Even if the larger carriers create and aggressively market service packages, or distinct product offerings for this segment, the risk of serious erosion of market position for LDDS is small.

Major Accounts

LDDS defines the major accounts segment as one that is comprised of customers generating $1,000 per month to $5,000 per month in billings. This was not a sector of the market that LDDS addressed pervasively prior to its acquisition of IDB and WilTel. LDDS management feels that success in this segment is driven by seven factors: (1) good switched product; (2) calling cards; (3) debit cards; (4) competitive international pricing; (5) private line capability; (6) data expertise in terms of sales force and engineering; and (7) multi-location billing packages. Combining the resources of all three companies here is the expectation that this segment can be successfully marketed now.

The company markets to its major accounts through face-to-face meetings of its sales force. There are presently 739,000 accounts, and with WilTel and IDB included, the count rises to 780,000. Eighty percent of the accounts generate less than $250 per month in revenues. The remaining 20% of the accounts produce 80% of total sales. Because of the direct contact with customers, customer churn is much lower than that experienced by the larger carriers. Management indicates this churn level is a little above 2% per month. According to the company, AT&T and MCI don't focus on accounts generating less than $5,000 per month through the use of a direct sales force. We also believe this is true, but neither AT&T nor MCI are willing to confirm this point.

By combining the capabilities derived from recent mergers, LDDS should be able to enhance its ability to address this market successfully. This market segment is still able to sustain higher-than-average prices and consequently better margins.

LDDS plans to redeploy salespeople from its small business segment to its major accounts sector, in order to capitalize on the perceived opportunity. This will leave approximately 700 salespeople in the small business account sector and a total of 405 in the major accounts sector. The total is comprised of 125 WilTel salespeople, 200 LDDS salespeople shifted from the small business segment, and 80 new hires.

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Salespeople move up the feeding chain of responsibility and compensation by progressing from small accounts to major accounts. The average small business salesperson may earn $50,000 per year and generate $3,500 of new sales monthly. Major accounts salespeople may earn as much $75,000 annually and generate new sales of $6,000 to $9,000 per month. Thus, while LDDS doesn't intend to expand its sales force materially, it does expect to upgrade the sales force and generate more revenue per average body.

National Accounts

The national accounts segment of the long distance business is a very tough one for a carrier such as LDDS to pursue. The company claims that this segment has only 5% gross margins and one which no one can make a lot of money. This is true, which explains why LDDS avoids this segment. WilTel attempted to address this market, but never achieved a reasonable penetration. While the company will occasionally take a rifle-shot approach to this segment, there is no desire by management to make any aggressive efforts in this area.

Carrier Business

Based upon the strong growth of WilTel's carrier business and good growth in the low-end business market (which WilTel's customers primarily serve), we expect carrier business revenues to expand in the range of 20-25% annually. This growth will also be enhanced by the combination of international services, which WilTel will be able to offer through IDB's network service. This should be a valuable addition to WilTel's business because of the fact it can now offer a more complete package and also because the international market is growing upward of 50% faster than the domestic long distance business.

Operator Services

The operator services segment is essentially a new opportunity for LDDS, acquired through its Resurgens acquisition. This business segment has above average margins because it is value-added in nature, and it has above-average growth. In our model, we assume the ability to grow this business 8-10% per year.

Earnings Outlook

Expectations for Industry

We have been quite bullish about the fundamental prospects for the long distance business. This has clearly not been the discounted, consensus view reflected

in the long distance stock prices over the past 15 months. Nevertheless, we think 1995 will show that volume growth is still accelerating, prices are stable, marketing spending is containable, and margins will rise. In addition, we don't anticipate precipitous Bell entry into long distance, and therefore are not concerned by a cataclysmic change in the industry's competitive dynamic. At the low end of the business market, where LDDS focuses, the fundamentals are even more attractive because there are more ways for companies to differentiate themselves within a segment with higher-than-average prices and margins.

Current long distance industry volume growth is about 9.4%. This is comprised of 15-20% growth in international, data and 800 service. The low end of the business market, where LDDS lives, appears to be growing minutes at about a 15% rate. These volume growth rates should continue to rise gradually for two reasons. First, new applications are being developed by long distance carriers to drive usage. So, things like interactive, on-line networks will drive growth, as will the proliferation of networked computers, wireless voice and data applications, and any new communications-oriented interactive terminal. Further on down the line, video will become a big driver of growth. Initially, video calling from the desktop will be the main area of growth, but this will expand over the next ten years to the home.

On top of the expansion of applications consuming more transmission capacity, we do expect the inevitable reduction in access charges to allow lower prices. Thus, if access charges fall 40-50% over the next five years, this will permit a dollar-for-dollar reduction in long distance rates, leading to a 15% fall in prices. Long distance usage is very price elastic, so we would expect this reduction to spur even higher usage.

LDDS Communications, Inc.

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The bottom line on usage is that we anticipate by the end of 1995 long distance minutes will be growing above a 10% rate. Over the next several years, this rate should be able to expand to 11-12%. In LDDS' part of the market, the 15% growth in minutes should also expand, although at not quite the rate of other market segments, since it seems the factors driving accelerated growth will more profoundly impact the residential and high-end business markets.

Stable Pricing Environment The market does not

yet seem to buy into the notion that long distance rates are stable for all the carriers, but we believe this is in fact the case to be demonstrated with 1995 results. For LDDS, this is not as big an issue since its markets have been somewhat (but not completely) insulated from competitive pricing actions.

Most of the concern in the market focuses on the residential segment, and, of course, LDDS is hardly present in this area. The low end of the business market is getting increasing attention by the larger carriers, but prices have held up, and, in fact, AT&T recently put through a 2.9% rate hike, which LDDS gladly embraced. Thus, we don't view pricing issues as of major fundamental importance to LDDS or the industry over the next several years, but a skittish investor attitude will require this be proven through results. Results in 1995 should provide this evidence.

Marketing Spending High for Big Three AT&T, MCI, and Sprint continue to subsidize Madison Avenue, the TV broadcasters, and telemarketers with their bulging advertising and promotional budgets. Fortunately, these budgets don't appear to be expanding for full year 1995. The companies are trying to scale back this growth and rationalize their efforts in order to boost margins. LDDS does not face these same concerns. Its primary marketing spending is on direct sales efforts. Until AT&T and MCI start sending armies of salespeople to $1,000 per month accounts, it does not appear that LDDS will get caught up in the frenzy. Thus, it can continue to enjoy relatively low SG&A, and, in fact, benefit from increasing economies of scale in this area.

Bell Entry into Long Distance Years Off There is no doubt the Bell Regionals will enter the long distance business . . . some day. "Some day" will probably not arrive in a mass-market way for at least three to four years. Federal legislation that would allow this still has only a 50/50 chance of passage. And, even if passed, the Bells will have to open the local exchange to competition *before* they are allowed into a specific market. The name of the game in the future, in terms of success in the telecom business, will be marketing skill, cost structures and responsiveness to the customer—all skills that LDDS has honed successfully over the past ten years.

The flip side of the Bell entry question for LDDS is, Will it get bought out or benefit in other ways? A buyout is possible, but we don't think a likely scenario. We don't believe any of the Bells want to

challenge the long distance carriers outside of the areas of strength, which is their home service territory. On the other hand, we do expect that LDDS is in a good position to sell services to the Bells, which will help them compete against the bigger, long distance carriers. As we note later on, these services include transmission, billing systems, enhanced 800 services and international connectivity. It is hard, if not impossible, to size or time the opportunity in this area, but it clearly exists and offsets any risk that Bell long distance entry might imply.

Assumptions Specific to LDDS

Financial Outlook

In 1994, LDDS produced earnings per share of $1.05 on a stand-alone, operating basis. The reported figure, which includes IDB on a restated basis, as well as the one-time charges associated with the IDB merger, brought earnings down to a loss of $0.95 per share. The $1.05 number represents a 24% gain in earnings per share, based on 49% growth in revenues and 55% growth in operating income. Minutes volume was up 50% for the year.

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Table 3
LDDS Communications
Consolidated Quarterly Income Statement Estimates

$ in thousands, except per share data

Restated to include IDB

	1994	1994	1995E									
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year	First Qtr(E)	Second Qtr(E)	Third Qtr(E)	Fourth Qtr(E)	Year(E)
Total Revenues	**411,280**	**424,485**	**439,771**	**433,078**	**1,708,614**	**533,898**	**545,315**	**568,558**	**572,994**	**2,220,765**	**862,297**	**911,944**	**955,619**	**996,681**	**3,726,542**
Operating Expenses															
Line costs	239,056	239,748	244,868	241,936	965,608	328,442	348,629	365,513	405,049	1,447,633	478,057	504,305	525,591	550,567	2,058,520
As a %of total revenues	58.1%	56.5%	55.7%	55.9%	56.5%	61.5%	63.9%	64.3%	70.7%	65.2%	55.4%	55.3%	55.0%	55.2%	55.2%
SG&A	73,513	75,446	78,071	74,660	301,690	91,465	99,153	100,337	141,405	432,360	152,109	160,046	167,233	175,815	655,203
As a %of total revenues	17.9%	17.8%	17.8%	17.2%	17.7%	17.1%									

18.2%
17.6%
24.7%
19.5%
17.6%
17.6%
17.5%
17.6%
17.6%
Depreciation and amortization 30,976 33,693 34,943 34,296 133,908 38,067 40,396 42,646 42,719 163,828 79,331 83,443 86,006 89,701 338,481
As a %of total revenues
7.5%
7.9%
7.9%
7.9%
7.8%
7.1%
7.4%
7.5%
7.5%
7.4%
9.2%
9.2%
9.0%
9.0%
9.1%
Direct merger costs 0 0 0 0 0 0 0 0 15,002 15,002 0 0 0 0 0Restructuringandother As a %of total revenues
83.5%
82.2%
81.4%
81.0%
82.0%
85.8%
89.5%
95.6%
115.4%
96.9%
82.3%
82.0%
81.5%
81.9%
81.9%
Operating income 67,735 75,598 81,889 82,186 307,408 75,924 57,137 25,062 (88,385) 69,738 152,799 164,150 176,790 180,599 674,337
As a %of total revenues
16.5%
17.8%
18.6%
19.0%
18.0%
14.2%
10.5%
4.4%
-15.4%
3.1%
17.7%
18.0%
18.5%
18.1%
18.1%
Other income (expense)
Interest expense (7,652) (8,687) (9,940) (10,227) (36,506) (10,129) (11,391) (12,778) (13,005) (47,303) (65,187) (62,773) (57,944) (55,530) (241,433)
Shareholder litigation settlement 0 0 0 0 0 0 0 (76,000) 0 (76,000) 0 0 0 0 0Miscellaneous **Income before taxes** 61,968 68,618 73,867 74,009 278,462 69,062 45,687 (62,493) (100,598) (48,342) 89,612 103,377 120,846 127,069 440,904Provisionforincometaxes 42.00%
42.00%
41.89%
41.00%
41.70%
41.95%
56.64%
-78.83%
30.11%
-152.70%

40.00%
40.00%
40.00%
40.00%
40.00%
Income before extraordinary item 35,941 39,799 42,927 43,665 162,332 40,091 19,812 (111,756) (70,305) (122,158) 53,767 62,026 72,507 76,241 264,543
Extraordinary item (net of taxes) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Net income 35,941 39,799 42,927 43,665 162,332 40,091 19,812 (111,756) (70,305) (122,158) 53,767 62,026 72,507 76,241 264,543
Preferred dividends 6,938 6,952 6,938 6,938 27,766 6,938 6,952 6,938 6,938 27,766 6,950 6,950 6,950 6,950 27,800
Net income to common 29,003 32,847 35,989 36,727 134,566 33,153 12,860 (118,694) (77,243) (149,924) 46,817 55,076 65,557 69,291 236,743
Earnings per share $0.23 $0.26 $0.28 $0.28 $1.05 $0.20 $0.08 ($0.75) $0.28 ($0.95) $0.29 $0.34 $0.41 $0.28 $1.48
Fully diluted earnings per share $0.23 $0.26 $0.28 $0.28 $1.05 $0.20 $0.08 ($0.75) ($0.49) ($0.95) $0.28 $0.32 $0.38 $0.40 $1.38
Average shares outstanding (thousands) 127,571 127,726 129,168 129,336 128,684 163,702 163,758 158,282 159,130 157,805 160,000 160,000 160,000 160,000 160,000
Fully diluted shares outstanding (thousands) 127,571 127,726 129,168 129,336 128,684 163,702 163,758 158,282 159,130 157,805 196,000 196,000 196,000 196,000 196,000

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Table 4
LDDS Communications
Consolidated Income Statement Estimates

$ in thousands, except per share data
Pre-Merger
Standalone Proforma CAGR
1993 1994 1994 1995E 1996E 1997E 1998E 1999E 2000E '95-'00
Revenues
Residential -- -- -- 160,788 180,082 199,891 220,880 240,759 262,427 10.3%
Commercial -- -- -- 1,769,785 2,019,324 2,281,836 2,532,838 2,811,450 3,120,710 12 .0%
Carrier -- -- -- 942,290 1,178,804 1,449,929 1,768,914 2,087,318 2,421,289 20.8%
Private line -- -- -- 635,672 718,944 805,218 889,766 978,742 1,076,617 11.1%
Operator services -- -- -- 224,355 245,691 267,803 291,905 318,177 346,813 9.1%
Total Revenues 1,144,714 1,708,614 2,220,765 3,732,888 4,342,846 5,004,677 5,704,302 6,436,446 7,227,855 14.1%
(Year-over-year % change) 43.0% 49.3% 94.0% 68.1% 16.3% 15.2% 14.0% 12.8% 12.3% -
Operating Expenses
Line costs 657,837 965,608 1,447,633 2,062,025 2,379,879 2,742,563 3,114,549 3,507,863 3,939,181 13 .8%
As a % of total revenues 57.5% 56.5% 65.2% 55.2% 54.8% 54.8% 54.6% 54.5% 54.5% -0.3%
SG&A 208,724 301,690 432,360 656,319 774,547 925,865 1,078,113 1,242,234 1,416,660 16.6%
As a % of total revenues 18.2% 17.7% 19.5% 17.6% 17.8% 18.5% 18.9% 19.3% 19.6% 2.2%
Depreciation and amortization 79,921 133,908 163,828 339,058 396,734 431,536 469,338 510,740 555,142 10 .4%
As a % of total revenues 7.0% 7.8% 7.4% 9.1% 9.1% 8.6% 8.2% 7.9% 7.7% -3.3%
Provision to reduce carrying value o f certain assets 0 0 48,500 0 0 0 0 0 0 -
Direct merger costs 0 0 15,002 0 0 0 0 0 0 -
Restructuring and other charges 0 0 43,704 0 0 0 0 0 0 -
Total expenses 946,482 1,401,206 2,151,027 3,057,402 3,551,160 4,099,964 4,662,000 5,260,837 5,910,983 14 .1%
As a % of total revenues 82.7% 82.0% 96.9% 81.9% 81.8% 81.9% 81.7% 81.7% 81.8% -
Operating income 198,232 307,408 69,738 675,486 791,685 904,713 1,042,302 1,175,609 1,316,872 14.3%
As a % of total revenues 17.3% 18.0% 3.1% 18.1% 18.2% 18.1% 18.3% 18.3% 18.2% 0.1%
(Year-over-year % change) 537.3% 55.1% -64.8% 868.6% 17.2% 14.3% 15.2% 12.8% 12.0% -
Other income (expense)
Interest expense (27,032) (36,506) (47,303) (241,433) (220,490) (194,483) (154,808) (107,370) (51,870) -26.5%
Shareholder litigation settlement 0 0 (76,000) 0 0 0 0 0 0 -
Miscellaneous income 4,295 7,560 5,223 8,000 8,500 9,000 9,500 10,000 10,500 5.6%
Income before taxes 175,495 278,462 (48,342) 442,053 579,695 719,230 896,995 1,078,239 1,275,502 23.6%
Provision for income taxes 71,313 116,130 73,816 176,821 231,878 287,692 358,798 431,296 510,201 23 .6%
Effective tax rate (%) 40.6% 41.70% -152.7% 40.0% 40.0% 40.0% 40.0% 40.0% 40.0% 0.0%
Income before extraordinary item 104,182 162,332 (122,158) 265,232 347,817 431,538 538,197 646,943 765,301 23.6%
Extraordinary item (net of taxes) 0 0 0 0 0 0 0 0 0 -
Net income 104,182 162,332 (122,158) 265,232 347,817 431,538 538,197 646,943 765,301 23.6%

Preferred dividends 10,451 27,766 27,766 27,800 27,800 27,800 27,800 27,800 27,800 0.0%
Net income to common 93,731 134,566 (149,924) 237,432 320,017 403,738 510,397 619,143 737,501 25.4%
Earnings per share ($) ($0.88) $1.05 ($0.95) $1.48 $2.00 $2.52 $3.19 $3.87 $4.61 25.4%
Fully Diluted Earnings per share ($) $0.85 $1.05 ($0.95) $1.38 $1.80 $2.21 $2.73 $3.26 $3.84 22.6%
Average shares outstanding (thousands) 106,734 128,684 157,805 160,000 160,000 160,000 160,000 160,000 160,000 0. 0%
Fully diluted shares outstanding (thousands) 110,442 128,684 157,805 196,000 197,000 198,000 199,000 200,000 201,000 0. 5%

Chart 7|
LDDS Communications
Revenue and Profit Outlook

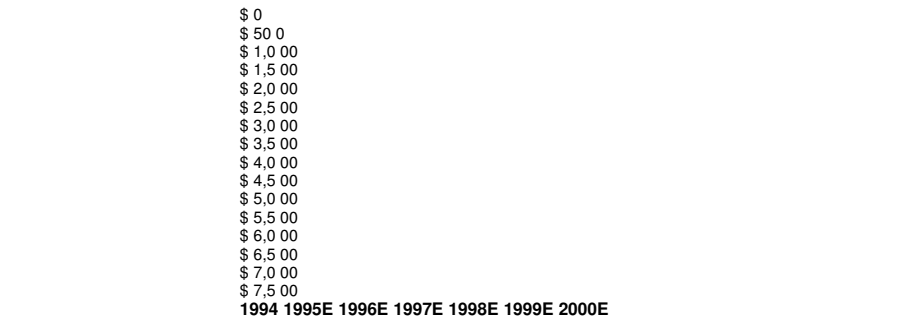
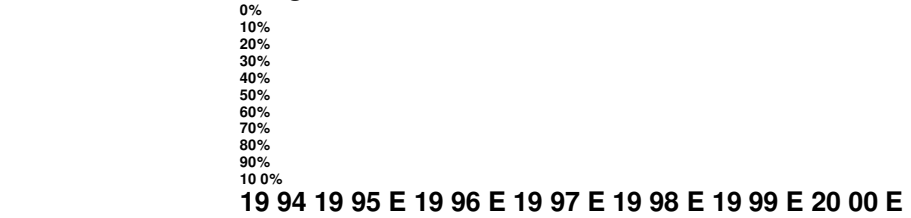


Chart 8
LDDS Communications
Margin Estimates



Off this $1.05 base, the company has been emphatic about supporting 30% earnings per share growth for at least the next two years. Given the 24% increase in shares outstanding on a fully diluted basis (196

million fully diluted shares, which include full conversion of LDDS' preferred 1 and preferred 2-26 million shares; and full conversion of the IDB convertible notes, 5.1 million shares), this implies a hefty increase in net income. Can the company produce this? We think it can based upon the internal growth from LDDS, the new growth from IDB and WilTel, and the cost savings the combination will produce. We discuss this in detail below in the following paragraphs.

Prior to last year's mergers, LDDS' guidance for earnings per share was about $1.25, based on total revenues of about $1.85 billion. The new guidance is total revenues of about $3.7 billion, with earnings per share $1.35-1.40. We believe this is possible, and it is reflected in our earnings model in Tables 3 and 4 as well as in Charts 7 and 8. As our model demonstrates, after the first couple of years of breakneck growth, capitalizing on the two mergers, we anticipate a slowdown in operating income growth to the mid-teens level, yielding a compounded annual growth rate in operating income of 14.3% between the years 1995 to 2000. Our estimate for compounded annual earnings per share growth of 22.6% for this same time period is leveraged from the significant decline in interest expense, which we have included in the model, due to the application of free cash flow to debt reductions.

Fixing the IDB Problem

After taking into account one-time charges for IDB, its broadcast unit had a $14-15 million loss in the fourth quarter. The loss on a pretax basis was $25 million. This business, which was at the core of IDB's operations, was clearly failing. As a result, as of March 9, LDDS essentially exited the management broadcast business by essentially putting it under a management contract with Keystone Broadcasting. This has eliminated LDDS' financial risk in the business. The contract calls for LDDS to collect $6-7 million in income in 1995.

IDB's Systems business had a $2.0 million pretax loss in the fourth quarter, and the Mobile business had a $2.8 million loss. LDDS expects to turn around these businesses as well, and is confident of improved operations in 1995.

To improve IDB's international business, it is moving traffic onto its network. In the fourth quarter of 1994, there were still large amounts of minutes overflowing the IDB network, creating serious cost problems. This has been corrected as of January 9, so that all WATS overflow traffic will

go onto the MCI network at LDDS' preferred rates. LDDS started to send all IDB minutes on its international direct operating agreements starting in August 1994. This was a good move because it will accelerate the development of return traffic in 1995. Other areas of operating improvement within the IDB morass included disconnecting seven carrier customers, because the gross margin on their business was so poor that profitability was impossible. Now LDDS management feels that it has established a stable base of carrier customers on the IDB network, which will allow a quick improvement in 1995 profitability.

The bottom line is that LDDS feels that IDB is now under control—the bleeding has stopped. The company accepted Jeffrey Sudikoff's (IDB's former CEO) resignation from the company.

In contrast to IDB, WilTel's operations are considered clean. LDDS and WilTel have been working well together. Roy Wilkens will stay on as president and CEO of WilTel. Plus, all of the engineering and MIS functions of LDDS will fall under Wilkens' control.

Revenue Growth of 15% Achievable

As Chart 6 depicts, LDDS has been able to grow volumes very aggressively over the past four years, and revenue growth has followed suit. While revenue per minute has certainly been trending down over this period, most recently the trend is driven by a change in the mix of business, not by lower prices. In particular, the downward trend in the fourth quarter of 1994 was driven both by the mix shift and by the seasonally weaker generation of higher yielding operator services traffic. Thus, the company has not experienced price erosion within product groups, nor is it likely to be negatively affected by such a trend.

Looking forward, we anticipate revenue growth of 15-16% over the next couple of years, trending downward toward 13-14% thereafter. In the near term, the higher growth will be driven by volume growth of about 25-30% in the carrier market, 15% in the commercial market, 18-20% in international, and 12% in residential. Private line installs should rise by about 13-15% annually.

Price erosion should be small, as we anticipate rather stable long distance pricing overall over the next several years. However, volume growth will outstrip revenue growth owing to the changing

mix of business, lower access charges, and certainly some pricing pressure across most business segments.

Costs Will Remain Competitive

As our previous comments illustrated, LDDS has been a low-cost supplier of long distance services. We expect this situation to persist for all the reasons described earlier. One major contributor to this situation in the near term will be the $130-140 million of annual cost savings derived from the IDB and WilTel mergers. These benefits will recur and indeed expand over time as the company is able to more fully exploit the network opportunities. An example of the evolving efficiencies is the fact that at year-end 1994 the company had 7,200 employees, but the company anticipates reducing this number by 400 positions by year-end 1995. As our model demonstrates, the dynamics of transitioning the company from being a pure reseller to becoming a facilities-based carrier transforms the income statement. We anticipate significant access savings, but higher depreciation expenses.

In addition, as the company broadens its horizons domestically and internationally, expanding up-market, there will be inevitable marketing and administrative cost increases.

Each of these trends is factored into our forecasts, producing the strong profit story that LDDS represents. A steady state operating margin of about 18% is possible, assuming the company manages to focus on its present business segments. To the extent there is a shift in this strategy, operating margins would likely decline. This would not necessarily be negative to earnings, because it may permit an acceleration in top-line growth, without a commensurate increase in deployed capital, which then could have a positive impact on earnings growth and returns on investment. For the time being, we don't foresee this kind of transition.

Interest Expense

In forecasting the company's interest expense, we have assumed a fixed interest rate level of 7.3%, representing the weighted average of its revolving credit facility along with IDB's 5% fixed rate note. Our forecast reflects strong cash flow generation being used to reduce debt in future years, which is why the interest expense level declines at a 26.5% compounded annual rate in our model. As we discuss later, with the level of surplus funds growing, and our model not assuming any new acquisitions, debt levels decline precipitously over the forecasted period. Thus, the model indicates sharp reductions

in interest expense over the next five years.

Taxes

We have assumed a full tax rate for LDDS, not anticipating any events that would be able to reduce the statutory rate. In fact, with high levels of intangible amortizations, LDDS will continue to report premium tax rates for the foreseeable period. As a result, we have forecast a 40% tax rate for the next five years.

Cash Flow Exceeds Earnings Growth

LDDS suggests that capital expenditure requirements will be in the area of $275 million annually. Higher-than-anticipated growth in carrier services could raise fixed investments. We would anticipate, as the company grows its business successfully, that capital spending will have to rise. This has been the case for every other long distance carrier, and we don't think LDDS can avoid the trend. Thus, we have factored in capital spending increases of $20-30 million each year over the next several years. Because of strong cash flow, LDDS will be able to fully fund these capital spending increases, plus repay debt. Our cash flow model looks to a significant amount of free cash flow generation over the next five years, starting in 1995. As Table 5 shows, free cash flow may increase by a 24% compounded annual rate over the next five years. Free cash flow in 1995, prior to the WilTel cash acquisition, should be as high as $300 million.

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Table 5
LDDS Communications
Cash Flow Estimates

$ in thousands

	1993	1994	1995E	1996E	1997E	1998E	1999E	2000E	CAGR '95-'00
Net income (before dividends)	104,182	(122,158)	265,232	347,817	431,538	538,197	646,943	765,301	23.6%
Depreciation and amortization	79,921	163,828	339,058	396,734	431,536	469,338	510,740	555,142	10.4%
Cash from operations	184,103	41,670	604,289	744,551	863,074	1,007,535	1,157,683	1,320,444	16.9%
Less - preferred dividends	(10,451)	(27,766)	(27,800)	(27,800)	(27,800)	(27,800)	(27,800)	(27,800)	0.0%
Cash from internal sources	173,652	13,904	576,489	716,751	835,274	979,735	1,129,883	1,292,644	17.5%
Capital Investments									
Capital expenditures	(35,629)	(50,000)	(275,000)	(300,000)	(320,000)	(350,000)	(380,000)	(400,000)	7. 8%
Other net (including acquisitions)	(175,448)	(1,095,941)	0	0	0	(0)	0	(0)	-
Free cash flow	**(37,425)**	**(1,132,037)**	**301,489**	**416,751**	**515,274**	**629,735**	**749,883**	**892,644**	24.2%
Net change in equity	1,184,966	1,090,797	(600,433)	(0)	0	0	0	(0)	-
Net change LTD	192,238	274,020	2,329,600	(300,000)	(473,000)	(585,000)	(680,000)	(800,000)	-
Net change NP & CPLTD	2,590	(8,543)	0	0	0	0	0	0	-
Net external financing	**1,379,794**	**1,356,274**	**1,729,167**	**(300,000)**	**(473,000)**	**(585,000)**	**(680,000)**	**(800,000)**	-
Other assets and deferred	(1,369,943)	(432,880)	(1,976,051)	4,551	4,297	4,057	3,831	3,617	-
Other liabilities	29,063	152,095	(2,020)	27,448	29,782	31,483	32,946	35,613	-
Changes in working capital									
Changes in current assets	(141,787)	(364,184)	(103,906)	(258,377)	(158,840)	(167,910)	(175,715)	(189,938)	12.8%
Changes in current liabilities	142,319	424,564	58,906	128,091	138,985	146,921	153,750	166,196	23.1%

Net change in working capital 532 60,380 (45,000) (130,285) (19,855) (20,989) (21,964) (23,742) -12.0%
Change in cash 2,021 3,832 7,585 18,465 56,498 59,286 84,696 108,132 70.1%

Table 6
LDDS Communications
Balance Sheet Estimates
$ in millions, except per share data
Post WilTel
1992 1993 1/5/95 E 1995E 1996E 1997E 1998E 1999E 2000E
ASSETS
Current Assets Cash and cash equivalents 4,147 6,168 10,000 17,585 36,050 92,548 151,835 236,531 344,
663
Accounts receivable, net bad debt allowance 145,230 268,355 590,000 634,591 868,569 1,000,935 1,140,860 1,287,289 1,445,571Income taxes receivable 114
Total current assets 178,176 321,984 690,000 801,492 1,078,333 1,293,671 1,520,867 1,781,278 2,079,348
Property& Equipment: Transmission equipment 148,152 173,959 1,416,409 0 0 0 0 0 0Communicationsequipment 3)
Net property and equipment 213,140 344,296 1,326,409 1,341,726 1,348,742 1,340,956 1,325,368 1,298,378 1,246,986
Excess of cost over net tangible assets acquired, net of accumulated depreciation: Goodwill 379,576 1,693,608 2,000,000 3,875,625 3,776,875 000
Other tangibles 11,222 32,713 40,000 38,000 36,100 34,295 32,580 30,951 29, 404
Total 427,905 1,774,294 2,090,000 3,958,625 3,852,975 3,747,420 3,641,955 3,536,576 3,431,279
Line installation costs, net of accumulated depreciation 14,643 26,811 47,000 44,180 41,529 39,037 36,695 34,493 32, 424
Other assets 35,758 47,144 144,129 175,000 175,000 175,000 175,000 175,000 175, 000
Total Assets 869,622 2,514,529 4,297,538 6,321,023 6,496,579 6,596,085 6,699,886 6,825,726 6,965,036
LIABILITIES & SHAREHOLDERS' EQUITY
Current Liabilities S-T debt and current maturities of L-T debt 5,953 8,543 0 0 0 0 0 0 0Accounts payable 671
Accrued line costs 60,528 132,394 0 298,631 347,428 400,374 456,344 514,916 578, 228
Accrued restructuring costs 24,527 1,530 0 0 0 0 0 0 0Other current liabilities 950
Total current liabilities 164,070 308,979 725,000 783,906 911,998 1,050,982 1,197,904 1,351,654 1,517,850
Long-term liabilities, less current portion: Long-term debt 333,742 525,980 800,000 3,129,600 2,829,600 2,356,600 1,771,600 1,091,600 600
Deferred income taxes payable 27,472 0 40,000 40,000 40,000 40,000 40,000 40,000 40, 000
Other liabilities 1,370 57,905 170,000 167,980 195,428 225,210 256,694 289,640 325, 253
Total long-term liabilities 362,584 583,885 1,010,000 3,337,580 3,065,028 2,621,810 2,068,294 1,421,240 656, 853
Shareholders'EquitySeries1 preferred stock 0 109 109 109 109 109 109 109 109Series2 31
Additional paid-in capital 196,904 1,427,596 2,354,000 1,754,336 1,754,336 1,754,336 1,754,336 1,754,336 1,754,336Retained earnings shareholders' equity 342,968 1,621,665 2,562,538 2,199,537 2,519,554 2,923,292 3,433,689 4,052,832 4,790,333
Total Liabilities and Shareholders' Equity 869,622 2,514,529 4,297,538 6,321,023 6,496,579 6,596,085 6,699,886 6,825,726 6,965,036
Debt as a %of total capitalization 49.8% 24.8% 23.8% 58.7% 52.9% 44.6% 34.0% 21.2% 5.7%
Tangible book value per share ($0.89) ($1.28) $2.99 ($10.99) ($8.33) ($5.15) ($1.30) $3.23 $8. 49
Total shares outstanding (thousands) 95,489 119,255 157,805 160,000 160,000 160,000 160,000 160,000 160, 000

For modeling purposes, we have assumed the company deploys this excess cash into debt repayment. With the level of surplus cash, we have LDDS practically paying down all of its outstanding debt by 2000. We doubt this will happen, however. We would anticipate some acquisitions in this period, which would consume the cash, but have not attempted to factor this into our model. Given the company's avoid stance of only doing accretive acquisitions, if the excess cash were used to do acquisitions, then earnings growth should exceed our expectations.

Balance Sheet Gains

The WilTel acquisition exacerbates an already-weak tangible net worth situation. By adding $1.9 billion of goodwill ($600 million of hard assets), the acquisition intangibles rise to approximately $4 billion, representing 62% of total assets. And tangible net worth per share dips once more into the negative range at $11.00 by year-end 1995. As Table 6 shows, we forecast that shareholders' equity would be $2.2 billion by year-end 1995. Debt to total capitalization (not subtracting intangibles) would be approximately 59% by the end of the year. Are we concerned about the negative net worth? Not really. The company is producing significant excess cash. The negative net worth is a reflection of historical events and bare no impact on future performance.

Longer-Term Issues

Long-Term Outlook in an RBOC Infested Long Distance Business

LDDS has a decidedly different view of the future than its larger competitors. While the big guys rue the day the Bells enter long distance, LDDS appears to be rolling out the red carpet. But this enthusiasm is not based on the assumption that a Bell will buy out LDDS and make everybody rich (although this possibility does exist). Rather, the enthusiasm is based on LDDS' desire to sell services to the Bells that will facilitate their entry into long distance by the end of the decade. Most observers don't think of the Bells as needing much help in getting into long distance, but they clearly will. This can be an attractive opportunity for a company such as LDDS.

The Bells clearly don't possess all the necessary components for entry into long distance today, and even though there is time for them to prepare to enter the business, they are likely to source outside

vendors for many services. These could include enhanced 800 capabilities, transmission facilities in region and out-of-region, enhanced calling cards, prepaid calling cards, international transmission, nationwide origination, and billing systems. We don't have an estimate for the revenue potential of providing all of these services, but LDDS suggests it could be as large as the company's existing business.

Possible Strategic Investors

In addition to the rumors of a Bell company buyout of LDDS, there have been consistent rumors of EDS or IBM buying the company. These rumors make no sense to us, and we doubt they will occur. If EDS really wanted to own and to operate a network, it should have outbid LDDS for WilTel.

Having said this, however, we do think a strategic stake by either of these two companies, or perhaps a foreign telco, would make sense. By taking a strategic position in LDDS, an investor would be able to influence decisions and strategic planning that might help its own strategies. This could easily be seen as a positive for either of the technology companies mentioned here. In terms of a foreign buyer, the obvious choices are all in bed with other partners already. A not-so-obvious choice, however, might be Bell Canada. The company is somewhat involved with MCI, but not intimately linked yet. If that linkage fails to develop over time, it would probably make sense for this company to take a position in a U.S. carrier. Strategically, Bell Canada needs to offset the presence of the U.S. carriers in its markets (unless it gets completely in bed with MCI). LDDS would give the company full access to the U.S. market, the ability to offer fully integrated cross-boarder services, and the potential for crossing over into Mexico. Thus, while we aren't predicting anything here, nor do we want to stimulate rumors, we do think strategic stakes in LDDS by a variety of players would make sense.

If a Strategic Stake Developed, Would it Help the Stock? The last two examples of this (BT investing in MCI, and the plan for the German and French investment in Sprint) certainly would suggest not. A strategic stake adds value to a stock if the price paid is high enough and if the proceeds can be redeployed profitably. Just as LDDS does not seem

inclined to do an acquisition that is non-accretive, we suspect it would not take a strategic investment unless

it was also accretive. (It helps to have the CEO own 4.5% of the stock.)

Valuation

Table 7
Price Performance

as of April 13, 1995

Company	Year-to-Date	1994	1993
ALC	22.9%	7.3%	107.1%
AT&T	2.0	(4.3)	2.9
LCI	(3.3)	44.6	—
LDDS	32.5	(19.4)	61.3
MCI	19.7	(35.0)	42.6
Sprint	16.3	(20.5)	36.3

As indicated earlier, we view LDDS as a market performer and rate it a Hold. This rating bears no negative connotation relative to our expectation for growth and profitability for the company. Rather, it reflects the fact that the company is very effective in getting its story out into the market, and therefore, we believe that most of the upside in the stock has been realized over the past three months already, given its strong performance.

As Table 7 shows, LDDS has significantly outperformed every comparable long distance stock in 1995 so far. In 1994, its performance lagged the smaller long distance names because of the uncertainty associated with its plate full of mergers. However, in 1993, its performance was quite strong.

Table 1, which compares valuation measures across all the relevant long distance names, does not necessarily illustrate clearly the point that LDDS appears fully valued relative to its peers. Because operating income growth will be substantially lower than earnings per share growth, the valuation comparisons are a little misleading.

In terms of considering the valuation, it is important to keep in mind that 8 percentage points of the earnings growth rate is generated from the de-leveraging of the company. In reality, this is unlikely to occur to such a dramatic degree. The company is likely to reinvest much of the money in new acquisitions. Thus, it is not likely that the company will be viewed by investors as a true 23% grower. Rather, its operating income growth of 14% will be considered a better reflection of economic performance.

In viewing the valuation on LDDS, one needs to compare it with other regional long distance companies, as opposed to direct comparisons with the larger carriers. The disconnect between the valuations of the larger carriers and the smaller carriers is

evident in Table 1. Clearly the market is discounting the higher, more secure growth of the smaller players. The average P/E of 19.7 for LCI, ALC and LDDS is a clear indication of the differentiated expectations held by the market. While the historical P/E range for LDDS has been higher than the present level, this is not a good indication for a target range today. First of all, historical growth was even higher than it is today. Second, the market P/E was higher. And, third long distance multiples, in general, were at much loftier levels.

The comparison of P/E to growth rate is actually lower for these carriers than is the case for any of the three big carriers. This P/E to growth rate comparison for the three faster-growing regionals is within the range of reason. High-growth-rate companies typically are not able to maintain P/Es that exceed their growth rates as opposed to low-growth rate companies, at least in the telecom industry, where it seems to occur frequently.

LDDS' operating cash flow multiple is slightly above the group average, and more than 50% higher than MCI's and Sprint's. Why such a high level? First of all, we would hasten to note that P/Es are far more influential to stock prices than OCF multiples. But, clearly, there is great confidence that LDDS' growth rate can be high and sustainable.

The adjusted market cap to revenues is quite high for LDDS because of strong margins, but also because of high debt levels, which boost adjusted market capitalization. With a 1.9 ratio of adjusted market cap to revenues, LDDS stands at nearly twice the levels of AT&T, MCI, and Sprint, and is slightly higher than ALC, LCI and ACC.

LDDS Communications, Inc.

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While LDDS' valuation is at the high end of the group range in most measures, it shouldn't cause nosebleeds. Management is giving very clear signals as to its expected growth rate. This growth appears quite achievable, and the company has a good track record for delivering on what it promises. Thus, the high valuation is due to the visibility and low risk. This leaves little room for misinterpretation and distrust. Thus, the high price is reasonable and supportable. But, in our view, it does not leave much room on the table for near-term upside.

N.B.: CS First Boston Corporation has, within the last three years, served as a manager or co-manager of a public offering of securities for AT&T, IBM and Williams Companies, and makes a primary market in issues of LDDS Communications, MCI Communications, and Xerox. April 13, 1995, closing prices:

ACC (ACCC): 16 1/8 MCI Communications
ALC (ALC): 38 1/4 (MCI): 22
AT&T (T): 51 3/8 Sprint (FON): 32 1/8
IBM (IBM): 86 3/8 Williams Companies (WMB): 31 1/2
LCI (LCI): 25 7/8 Xerox (XRX): 115 1/4

LDDS Communications, Inc.

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Americas

Park Avenue Plaza
55 East 52nd Street
New York, NY 10055, U.S.A.
212 909 2000
Atlanta 404 656 9500 Miami 305 372 9600
Boston 617 556 5500 Philadelphia 215 851 1000
Chicago 312 750 3000 San Francisco 415 765 7000
Dallas 214 740 5000 San Juan 809 766 4200
Houston 713 220 6700 Toronto 416 947 2600
Los Angeles 213 253 2000 Washington, D.C. 202 833 2840

Europe

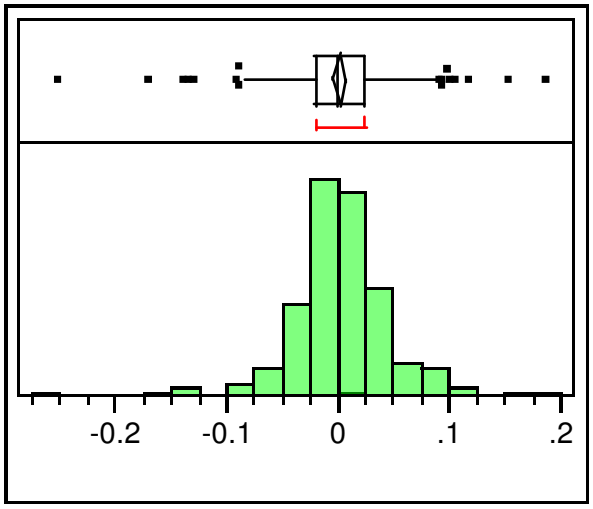
One Cabot Square
London E14 4QJ, England
4471 516 1616
Amsterdam 3120 556 7222 Milan 392 7601 2482
Budapest 361 175 9002 Paris 331 4076 8888
Frankfurt 49 69 15340 Prague 422 2481 0937
Geneva 4122 732 9050 Zug 4142 232151
Madrid 341 555 0796 Zurich 411 252 4477
Affiliate
Credit Suisse Financial Products
New York 212 527 1700
London 4471 516 2000

Pacific

Shiroyama Hills
4-3-1 Toranomon
Minato-ku, Tokyo 105, Japan
813 5404 9000
Auckland 649 302 5500 Osaka 816 243 0789
Beijing 861 501 4538 Singapore 65 535 3088
Hong Kong 852 847 0388 Sydney 612 394 4400
Melbourne 613 280 1666 Wellington 644 474 4000

FIGURE 2: Independent and dependent variables' distributions

Distributions
Excess Returns (-1 0)



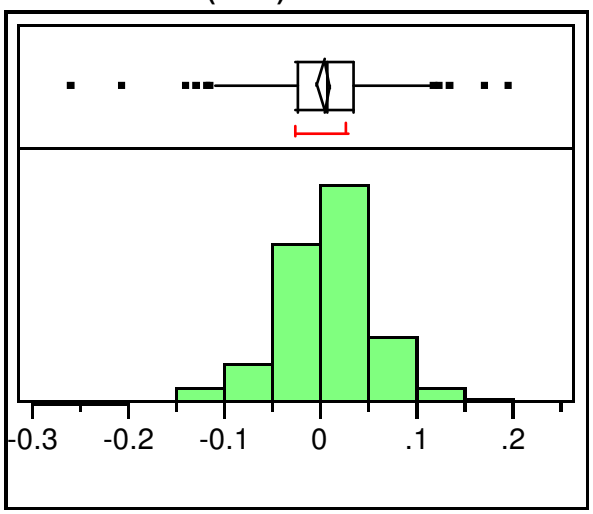
Quantiles

100.0%	maximum	0.1887
99.5%		0.1804
97.5%		0.0990
90.0%		0.0512
75.0%	quartile	0.0246
50.0%	median	0.0020
25.0%	quartile	-0.0193
10.0%		-0.0434
2.5%		-0.0880
0.5%		-0.2304
0.0%	minimum	-0.2503

Moments

Mean	0.0030266
Std Dev	0.0463773
Std Err Mean	0.002945
upper 95% Mean	0.0088271
lower 95% Mean	-0.002774
N	248

Excess Returns (-1 1)



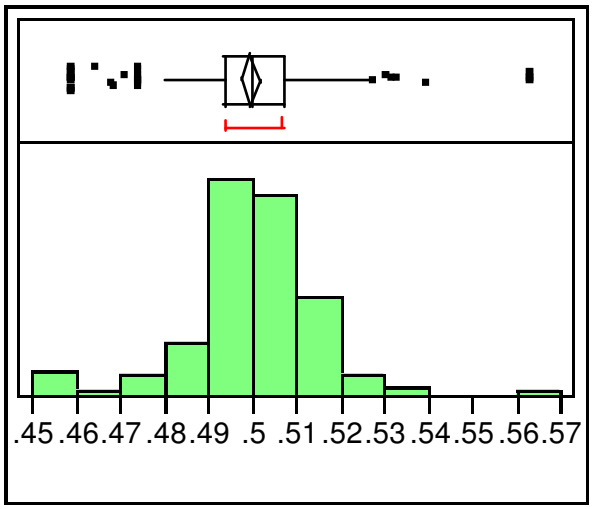
Quantiles

100.0%	maximum	0.1998
99.5%		0.1936
97.5%		0.1120
90.0%		0.0639
75.0%	quartile	0.0356
50.0%	median	0.0074
25.0%	quartile	-0.0211
10.0%		-0.0582
2.5%		-0.1101
0.5%		-0.2430
0.0%	minimum	-0.2560

Moments

Mean	0.0052806
Std Dev	0.0534825
Std Err Mean	0.0033961
upper 95% Mean	0.0119697
lower 95% Mean	-0.001408
N	248

Optimism score



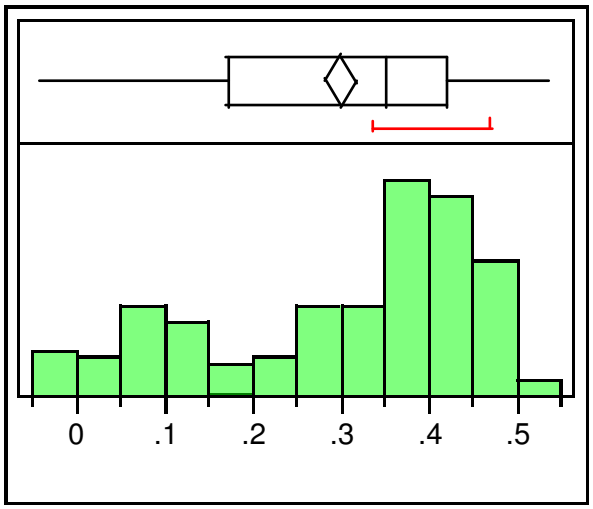
Quantiles

100.0%	maximum	0.56350
99.5%		0.56350
97.5%		0.53161
90.0%		0.51439
75.0%	quartile	0.50760
50.0%	median	0.50030
25.0%	quartile	0.49450
10.0%		0.48261
2.5%		0.45960
0.5%		0.45960
0.0%	minimum	0.45960

Moments

Mean	0.4999888
Std Dev	0.0155849
Std Err Mean	0.0009665
upper 95% Mean	0.5018921
lower 95% Mean	0.4980856
N	260

Certainty score



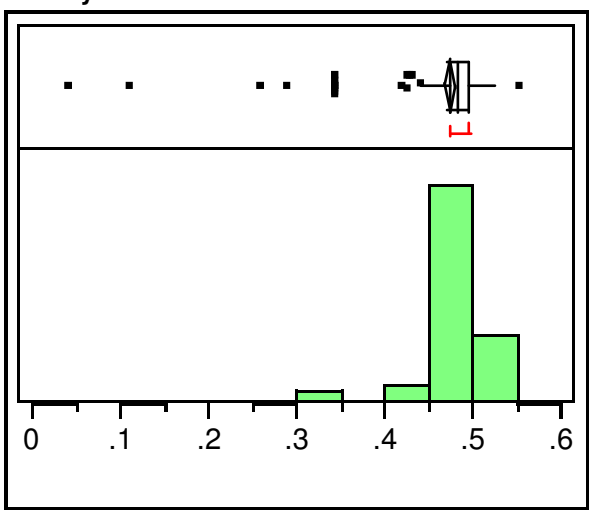
Quantiles

100.0%	maximum	0.5335
99.5%		0.5305
97.5%		0.4961
90.0%		0.4598
75.0%	quartile	0.4213
50.0%	median	0.3518
25.0%	quartile	0.1748
10.0%		0.0685
2.5%		-0.0184
0.5%		-0.0334
0.0%	minimum	-0.0374

Moments

Mean	0.300912
Std Dev	0.1505543
Std Err Mean	0.009337
upper 95% Mean	0.3192981
lower 95% Mean	0.282526
N	260

Activity score



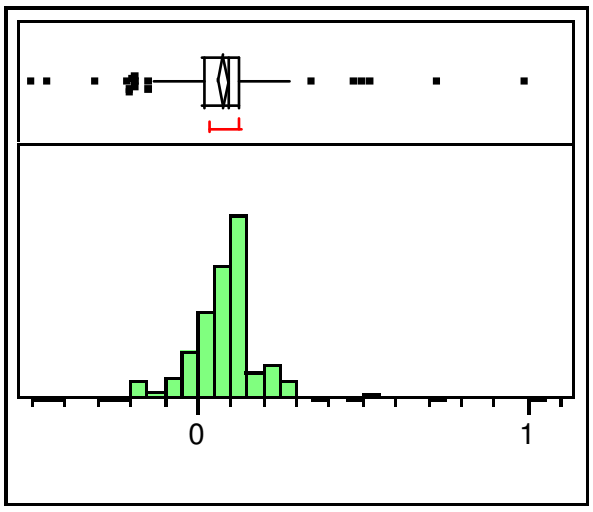
Quantiles

100.0%	maximum	0.55480
99.5%		0.54526
97.5%		0.51725
90.0%		0.50780
75.0%	quartile	0.49680
50.0%	median	0.48530
25.0%	quartile	0.47550
10.0%		0.44920
2.5%		0.34720
0.5%		0.06536
0.0%	minimum	0.04460

Moments

Mean	0.4759655
Std Dev	0.0509661
Std Err Mean	0.0031669
upper 95% Mean	0.4822018
lower 95% Mean	0.4697293
N	259

D Equity



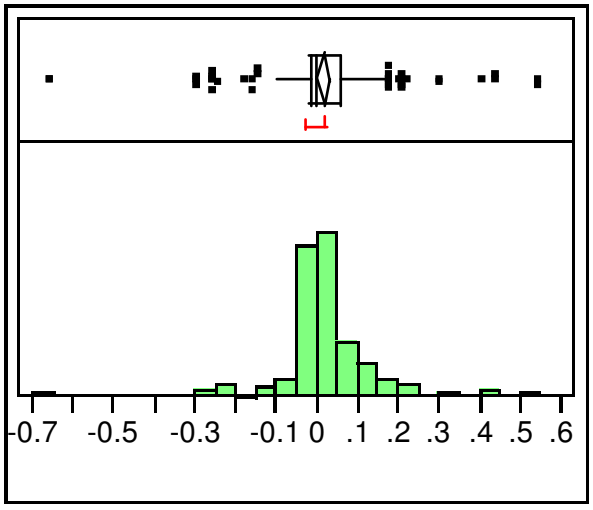
Quantiles

100.0%	maximum	1.000
99.5%		0.957
97.5%		0.375
90.0%		0.204
75.0%	quartile	0.130
50.0%	median	0.094
25.0%	quartile	0.026
10.0%		-0.038
2.5%		-0.194
0.5%		-0.485
0.0%	minimum	-0.493

Moments

Mean	0.0830126
Std Dev	0.1409661
Std Err Mean	0.0092549
upper 95% Mean	0.1012473
lower 95% Mean	0.0647778
N	232

D Debt



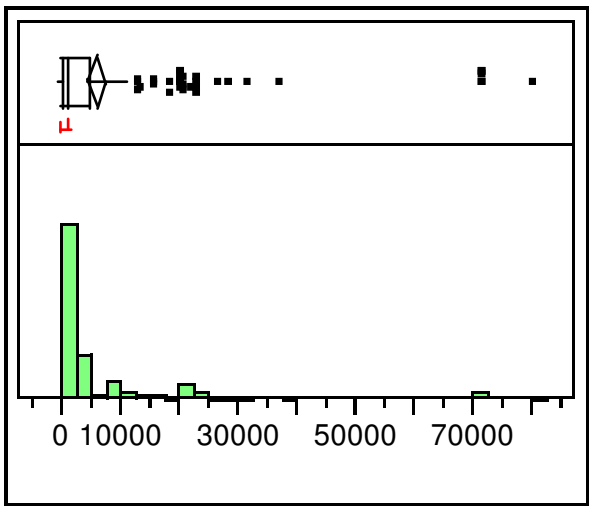
Quantiles

100.0%	maximum	0.5475
99.5%		0.5475
97.5%		0.3404
90.0%		0.1336
75.0%	quartile	0.0640
50.0%	median	0.0000
25.0%	quartile	-0.0103
10.0%		-0.0651
2.5%		-0.2595
0.5%		-0.6510
0.0%	minimum	-0.6510

Moments

Mean	0.0199799
Std Dev	0.1298458
Std Err Mean	0.0086182
upper 95% Mean	0.0369621
lower 95% Mean	0.0029976
N	227

Firm Size Assets



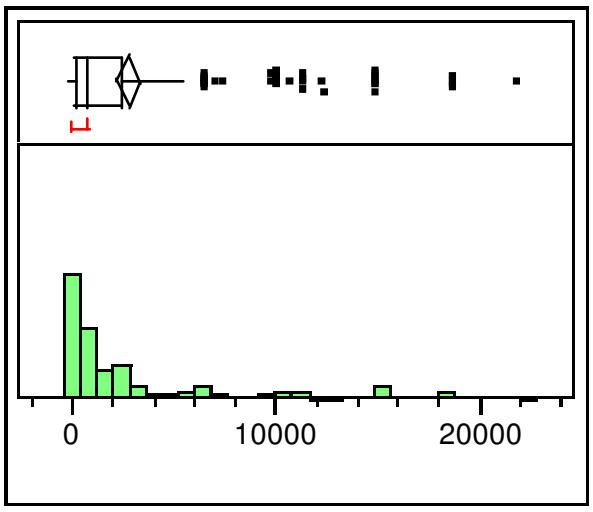
Quantiles

100.0%	maximum	80712
99.5%		79098
97.5%		72218
90.0%		20620
75.0%	quartile	4840
50.0%	median	1294
25.0%	quartile	320
10.0%		119
2.5%		37
0.5%		24
0.0%	minimum	22

Moments

Mean	6288.7204
Std Dev	12972.796
Std Err Mean	842.67368
upper 95% Mean	7948.8439
lower 95% Mean	4628.5969
N	237

Firm Size Equity



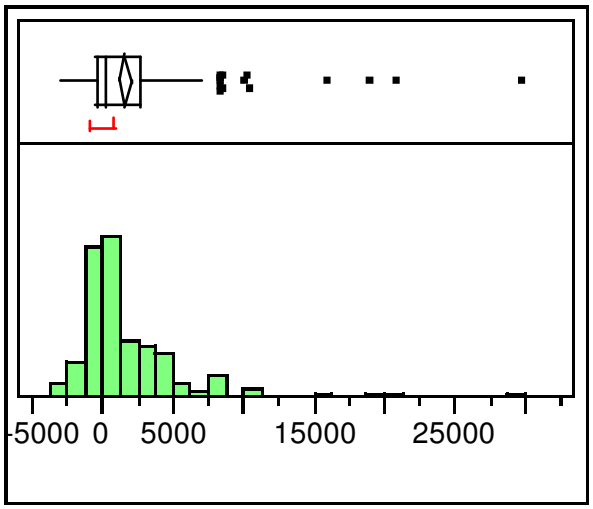
Quantiles

100.0%	maximum	22026
99.5%		21377
97.5%		18785
90.0%		10132
75.0%	quartile	2480
50.0%	median	703
25.0%	quartile	204
10.0%		82
2.5%		18
0.5%		-0.026
0.0%	minimum	-0.026

Moments

Mean	2797.6268
Std Dev	4488.5922
Std Err Mean	290.34289
upper 95% Mean	3369.597
lower 95% Mean	2225.6567
N	239

Distributions
D Securities Issuance



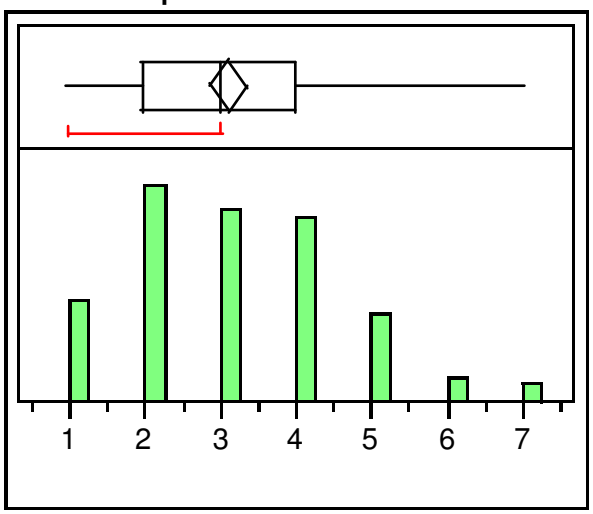
Quantiles

100.0%	maximum	29976
99.5%		29480
97.5%		10539
90.0%		5947
75.0%	quartile	2727
50.0%	median	372
25.0%	quartile	-247
10.0%		-888
2.5%		-2546
0.5%		-2814
0.0%	minimum	-2818

Moments

Mean	1708.2381
Std Dev	3899.0697
Std Err Mean	269.06137
upper 95% Mean	2238.6602
lower 95% Mean	1177.816
N	210

Forecast freq. Revision



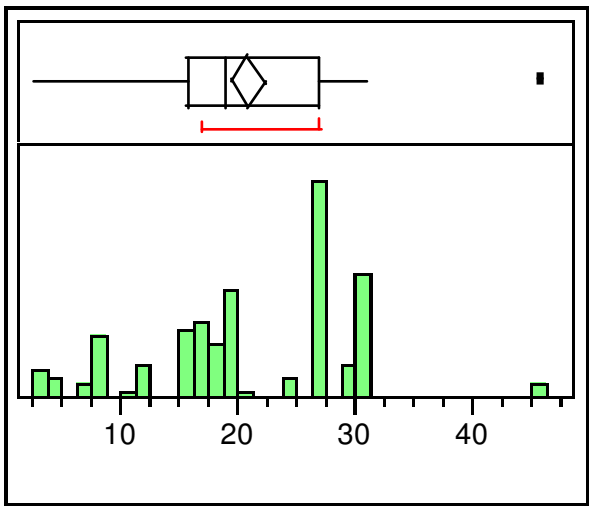
Quantiles

100.0%	maximum	7.0000
99.5%		7.0000
97.5%		6.7250
90.0%		5.0000
75.0%	quartile	4.0000
50.0%	median	3.0000
25.0%	quartile	2.0000
10.0%		1.0000
2.5%		1.0000
0.5%		1.0000
0.0%	minimum	1.0000

Moments

Mean	3.1153846
Std Dev	1.4339981
Std Err Mean	0.12577
upper 95% Mean	3.3642236
lower 95% Mean	2.8665457
N	130

#firms followed



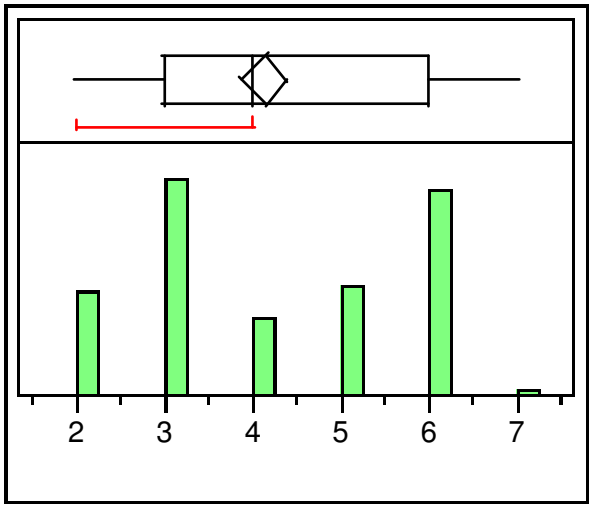
Quantiles

100.0%	maximum	46.000
99.5%		46.000
97.5%		31.000
90.0%		31.000
75.0%	quartile	27.000
50.0%	median	19.000
25.0%	quartile	16.000
10.0%		8.000
2.5%		3.000
0.5%		3.000
0.0%	minimum	3.000

Moments

Mean	20.969231
Std Dev	8.6776363
Std Err Mean	0.761079
upper 95% Mean	22.475044
lower 95% Mean	19.463417
N	130

of 2 digit SICs



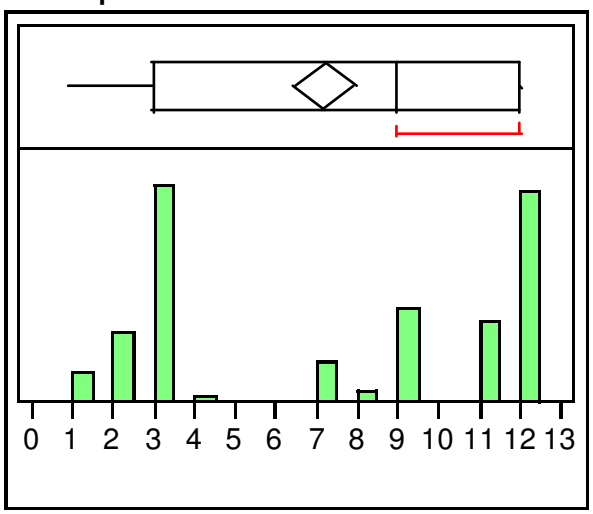
Quantiles

100.0%	maximum	7.0000
99.5%		7.0000
97.5%		6.0000
90.0%		6.0000
75.0%	quartile	6.0000
50.0%	median	4.0000
25.0%	quartile	3.0000
10.0%		2.0000
2.5%		2.0000
0.5%		2.0000
0.0%	minimum	2.0000

Moments

Mean	4.1538462
Std Dev	1.4965673
Std Err Mean	0.1312576
upper 95% Mean	4.4135426
lower 95% Mean	3.8941497
N	130

Gen. Experience



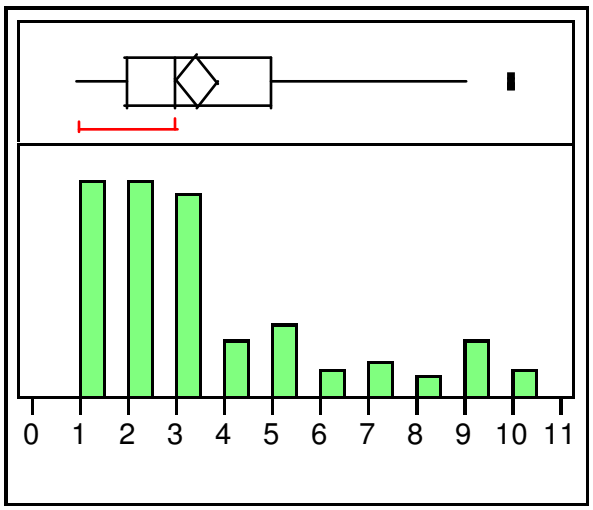
Quantiles

100.0%	maximum	12.000
99.5%		12.000
97.5%		12.000
90.0%		12.000
75.0%	quartile	12.000
50.0%	median	9.000
25.0%	quartile	3.000
10.0%		2.000
2.5%		1.000
0.5%		1.000
0.0%	minimum	1.000

Moments

Mean	7.2230769
Std Dev	4.1898093
Std Err Mean	0.3674706
upper 95% Mean	7.9501265
lower 95% Mean	6.4960274
N	130

Firm experience



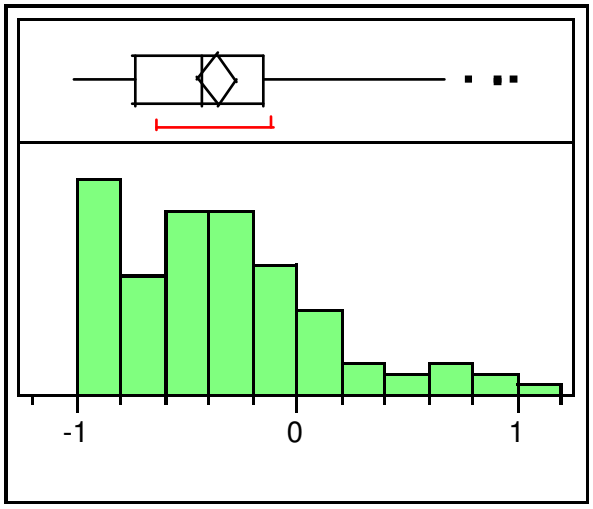
Quantiles

100.0%	maximum	10.000
99.5%		10.000
97.5%		10.000
90.0%		8.000
75.0%	quartile	5.000
50.0%	median	3.000
25.0%	quartile	2.000
10.0%		1.000
2.5%		1.000
0.5%		1.000
0.0%	minimum	1.000

Moments

Mean	3.4692308
Std Dev	2.5584287
Std Err Mean	0.224389
upper 95% Mean	3.91319
lower 95% Mean	3.0252716
N	130

Lagged forecast accuracy



Quantiles

100.0%	maximum	1.000
99.5%		1.000
97.5%		0.930
90.0%		0.294
75.0%	quartile	-0.147
50.0%	median	-0.418
25.0%	quartile	-0.722
10.0%		-0.893
2.5%		-1.000
0.5%		-1.000
0.0%	minimum	-1.000

Moments

Mean	-0.356517
Std Dev	0.4720007
Std Err Mean	0.0481734
upper 95% Mean	-0.260881
lower 95% Mean	-0.452153
N	96

TABLE 1: Summary of hypotheses and research questions

Hypothesis / RQ	Independent Variable	Dependent Variable
Market reaction to analysts' words		
		Changes in Excess Returns?
H1	Optimism	Positive and higher for more optimistic statements
H2	Changes in firms' securities (equity and debt)	Positive and higher for firms repurchasing securities
H3	Optimism	Positive and higher for smaller firms
H4	Degree of optimism	Negative and higher for pessimistic versus positive and lower for optimistic statements
H5	Certainty	Positive and higher for statements with more certainty
RQ1	Activity in optimistic statements	Explore changes in Excess Returns on statements with high optimism
RQ2	Activity	Explore changes in Excess Returns on statements
Analyst word choices based on their relationships with investment banking		
		Word choice by analysts
H6	Degree to which firms issue securities	More optimism
H7	Degree to which firms issue securities	More certainty
RQ3	Degree to which firms issue securities	Effect on words denoting activity in optimistic statements
RQ4	Degree to which firms issue securities	Effect on words denoting activity in statements with high certainty
H8	Timing of securities issuance	More optimism closer to the issue dates
Analysts' characteristics: The number of firms and industries covered, experience, company size, forecast frequency, and prior forecast accuracy Positive analysts' characteristics: Fewer firms and industries covered, more experience, bigger company sizes, higher forecast frequencies, and higher accuracies for prior forecasts		
Market reactions to analysts' characteristics based on the words used by the analysts		
	Analysts' characteristics	Changes in Excess Returns?
H9	More positive	Positive and higher for statements with higher optimism
H10	More positive	Positive and higher for statements with words denoting more certainty
RQ5	More positive	Effect on words denoting activity
Analysts' word choices based on their characteristics and investment banking relationships		
	Analysts' characteristics	Word choice by analysts
H11	More positive	More optimism for firms issuing securities
H12	More positive	More certainty for firms issuing securities
H13	More positive	More optimism closer to the issue dates

TABLE 2: Analyst reports – statement characteristics, finance variables, and analyst characteristics

No_	Optimism score	Certainty score	Activity score	Excess Returns (-1 0)	Excess Returns (-1 1)	D Equity	D Debt
1	0.5143	0.354	0.5001	-0.0006	-0.0062	0.090570337	0.087110541
2	0.5003	0.2922	0.5156	0.1036	0.0627	0.503797174	-0.047797573
3	0.5003	0.2922	0.5156	-0.0878	-0.0598	-0.446518053	-0.139956904
4	0.5003	0.2922	0.5156	-0.0392	-0.0375	0.061933914	0
5	0.5003	0.2922	0.5156	-0.023	0.0792	0.131002246	0.170850951
6	0.5003	0.2922	0.5156	-0.1691	-0.2029	0.022333588	-0.030390875
7	0.5003	0.2922	0.5156	-0.1363	-0.1383	0.480276164	0.007083808
8	0.49	0.1748	0.4652	0.0242	0.0143	0.091056985	0.088932764
9	0.49	0.1748	0.4652	-0.0047	-0.0019	0.007430447	0.019800593
10	0.4596	0.3518	0.3472			-0.187259821	-0.046247865
11	0.49	0.1748	0.4652	-0.0077	-0.0014	0.089190686	0.002507539
12	0.49	0.1748	0.4652	0.011	-0.0148	0.132330309	-0.021778584
13	0.4596	0.3518	0.3472	0.12	0.1265	0.094298597	0.069712056
14	0.4596	0.3518	0.3472	0.044	0.0577	0.144730551	-0.001262296
15	0.4596	0.3518	0.3472	0.1547	0.1998	0.051188964	0.015489805
16	0.4596	0.3518	0.3472	-0.0333	-0.0007	0.087002115	0.039884116
17	0.4596	0.3518	0.3472	0.0165	0.0638	0.058621499	-0.010282228
18	0.4596	0.3518	0.3472	-0.0311	0.0174	0.110578735	0.12705249
19	0.4596	0.3518	0.3472				
20	0.4596	0.3518	0.3472	-0.0278	0.008	0.262441775	0.101771267
21	0.4596	0.3518	0.3472				
22	0.5399	0.358	0.501	-0.0098	0.041	0.203782293	0.213493651
23	0.5028	0.3992	0.523	0.0419	0.0372	0.133688707	0.003945864
24	0.5042	0.3839	0.5205	-0.0164	0.0468	0.063681893	0.037051944
25	0.512	0.4199	0.5028	-0.0465	-0.0604	0.534020922	0.090816308
26	0.5146	0.3883	0.4999	-0.0119	-0.0111	0.123062386	0
27	0.5067	0.4041	0.5152	0.0359	0.0042	0.148328957	-0.000831607
28	0.516	0.4189	0.5085	0.0337	0.0562	0.352784246	-0.172593882
29	0.4689	0.4328	0.4886	-0.0177	0.0058		
30	0.5276	0.387	0.509	0.0175	0.0245	0.112804074	-0.033909209
31	0.5012	0.3826	0.4837	0.0996	0.0826	0.203444073	0.231452416
32	0.5191	0.3811	0.5078	0.0682	0.0808	0.1969039	-0.015348538
33	0.5078	0.3449	0.5208	0.0048	0.0124	0.216787653	0.014030747
34	0.5022	0.3723	0.5024	0.027	0.0183	0.007430447	0.019800593
35	0.5055	0.3733	0.5113	0.024	0.047		
36	0.5062	0.4219	0.506	0.0031	-0.036	0.272840646	-0.001441783
37	0.5267	0.3677	0.506	-0.0107	-0.0054	0.061062134	-0.067189367
38	0.5053	0.3947	0.4784	0.0331	0.051	0.184031319	-0.017403881
39	0.516	0.3879	0.4695	0.0508	0.0462	0.139458185	-0.003921439
40	0.4966	0.3697	0.4933	0.0303	0.0384	0.069986715	0.106135593
41	0.4966	0.3599	0.5028	-0.03	-0.0582	0.091056985	0.088932764
42	0.5058	0.4096	0.498	-0.0434	-0.0239	-0.037560208	0
43	0.5309	0.3717	0.4878	-0.0323	-0.1003	0.132330309	-0.021778584
44	0.5252	0.3905	0.4492	-0.0005	0.0005	0.276259296	-0.238599691
45	0.51	0.3658		0.0109	0.0166	0.089190686	0.002507539
46	0.5335	0.4047	0.4929	0.0459	0.0395	0.1560777	0
47	0.4948	0.1718	0.488	0.0151	0.0181		
48	0.5091	0.4355	0.4765	-0.0043	-0.018	-0.038051455	-0.247597552
49	0.4963	0.1029	0.4839	-0.0046	-0.0092	0.045764264	0.015110644
50	0.501	0.4216	0.501	0.0171	0.0181	-0.08288853	-0.019705809
51	0.4995	0.2777	0.5223	0.0204	0.0253	0.033165401	0.085479789
52	0.5002	0.0311	0.4934	-0.0288	-0.0445	0.191154285	-0.14910619
53	0.4978	0.1457	0.4798	0.0047	0.0064	0.042905824	-0.000873059
54	0.5048	0.4419	0.4857	-0.0044	0.0096	-0.071055961	-0.005491568
55	0.493	0.1262	0.4868	0.0043	0.0013		
56	0.4958	0.1012	0.4837	0.0067	0.0045	-0.087113556	-0.007045404
57	0.5172	0.4317	0.4625	-0.0088	-0.0029	-0.176954606	-0.014176092
58	0.4976	0.1432	0.4778	-0.0096	-0.0056	-0.118529712	0.021394202
59	0.5065	0.5196	0.4934	-0.0185	-0.0286		
60	0.4992	0.4843	0.5011	-0.0265	-0.0224	0.118267798	-0.012706161
61	0.5121	0.4713	0.5017	0.023	0.0262	-0.038051455	-0.247597552
62	0.5121	0.4713	0.5017	0.0247	0.017	0.033165401	0.085479789
63	0.5121	0.4713	0.5017	0.021	0.0367	0.191154285	-0.14910619
64	0.5121	0.4713	0.5017	0.0116	0.002		
65	0.5121	0.4713	0.5017	0.0392	0.066		

TABLE 2 continued: Analyst reports – statement characteristics, finance variables, and analyst characteristics

No_	Optimism score	Certainty score	Activity score	Excess Returns (-1 0)	Excess Returns (-1 1)	D Equity	D Debt
66	0.5068	0.4364	0.4653	-0.0157	-0.0066	0.122868867	-0.000115587
67	0.5149	0.3985	0.5039	-0.0034	0.0077	0.118267798	-0.012706161
68	0.4991	0.2609	0.4642	0.0201	0.0021	0.100132885	0.004168652
69	0.4953	0.4076	0.4938	-0.0055	-0.1025	0.108879123	-0.002226863
70	0.4866	0.4814	0.5007	0.0143	0.0237	0.130507529	0.017992677
71	0.5076	0.4949	0.4834	0.0116	0.0197	0.14861819	0.017641716
72	0.4993	0.4948	0.4957	-0.0243	0.0082	0.124239004	-0.086171462
73	0.5046	0.5035	0.4963	0.015	0.0721	0.118882102	0.180619062
74	0.4966	0.4615	0.4931	0.001	0.0083	0.063681893	0.037051944
75	0.4945	0.0683	0.4447	-0.028	-0.0244	-0.18146284	-0.287133219
76	0.4954	0.4212	0.485	-0.0331	0.0025	-0.18146284	-0.287133219
77	0.4931	0.0603	0.4727	-0.017	-0.0382	0.10968164	0
78	0.5021	0.4566	0.4691	0.0013	-0.0333	0.020719866	0
79	0.4979	0.444	0.5019	0.0294	0.0301	0.10968164	0
80	0.5216	0.4244	0.4587	-0.0008	0.0037	0.122868867	0
81	0.5216	0.422	0.4626	-0.0038	0.0291	0.199324278	0
82	0.4929	0.3655	0.4929	-0.0435	-0.0449	-0.492630218	-0.023882527
83	0.502	0.1397	0.4435	-0.0207	-0.0336	-0.088051632	-0.001106938
84	0.5004	0.2828	0.4833	-0.018	-0.0216	-0.088051632	-0.001106938
85	0.5066	0.4433	0.4707	-0.0813	-0.0847	-0.037560208	0
86	0.4812	0.3546	0.4869	0.0413	0.0151	0.133688707	0.003945864
87	0.4684	0.2757	0.4447	0.0255	0.0683	0.116310394	0.001585965
88	0.5025	0.0134	0.4938	0.0044	-0.003		
89	0.5127	0.2264	0.4828	0.0348	0.0499	0.124236825	-0.086171808
90	0.5127	0.2264	0.4828	0.0393	0.0345	0.118878734	0.180624955
91	0.5127	0.2591	0.4828	0.0786	0.0714	0.063681893	0.037051944
92	0.5127	0.2264	0.4828	0.0179	0.0476	0.123079022	0
93	0.5127	0.2685	0.4638	-0.0081	0.0547	0.14861558	0.017645048
94	0.5127	0.2264	0.4828	0.0275	0.0451	0.130507529	0.017992677
95	0.5127	0.2591	0.4828	0.093	0.1036	0.087002115	0.039884116
96	0.5127	0.2551	0.4631	0.0313	0.0019	0.118267798	-0.012706161
97	0.4835	0.5236	0.5031	0.0896	0.1039	-0.038051455	-0.247597552
98	0.5635	0.4213	0.0446	0.024	0.0415	0.130507529	0.017992677
99	0.4744	0.4598	0.483	-0.088	-0.0713	0.124236825	-0.086171808
100	0.4744	0.4598	0.483	-0.0606	-0.0818	0.118878734	0.180624955
101	0.4744	0.4598	0.483	0.0069	0.0075	0.063681893	0.037051944
102	0.4746	0.4625	0.483	-0.0688	-0.116	0.14861558	0.017645048
103	0.4744	0.4595	0.483	-0.0439	-0.0196	0.130507529	0.017992677
104	0.4745	0.4594	0.4852	-0.0108	0.0073	0.087002115	0.039884116
105	0.4745	0.4608	0.483	-0.0633	-0.0738	0.118267798	-0.012706161
106	0.4744	0.4598	0.483	-0.0609	-0.0953	0.233194575	-0.140915805
107	0.4999	0.4313	0.429	-0.0033	-0.0133	0.094298597	0.069712056
108	0.5006	0.4222	0.4999	0.0118	0.0153	0.063681893	0.037051944
109	0.51	0.4095	0.4855	0.0236	-0.0035	0.123079022	0
110	0.5018	0.4403	0.5083	0.0361	0.0316	0.130507529	0.017992677
111	0.5193	0.4437	0.4831	0.0279	0.0105	0.087002115	0.039884116
112	0.4989	0.4831	0.5029	0.0417	-0.0046	0.118267798	-0.012706161
113	0.5049	0.4566	0.4786	0.0464	0.036	0.110578735	0.12705249
114	0.4943	0.4053	0.4769	-0.0112	0.0865	0.1186251	0.113242739
115	0.4977	0.123	0.4738	0.0045	0.0634	0.203782293	0.213493651
116	0.4984	0.1113	0.4606	0.0494	0.1387	0.094298597	0.069712056
117	0.5016	0.2326	0.4239	0.063	0.0607	-0.014106308	0.208035436
118	0.4977	0.0838	0.463	-0.0101	-0.0076	0.118878734	0.180624955
119	0.4993	0.0878	0.4774	0.0367	0.0456	0.130507529	0.017992677
120	0.4988	0.2308	0.486	-0.0195	-0.0243	0.087002115	0.039884116
121	0.5011	0.1723	0.4685	0.0035	-0.0096	0.058621499	-0.010282228
122	0.4964	0.0898	0.4561	0.0388	0.039	0.100132885	0.004168652
123	0.5037	0.2301	0.4299	0.0738	0.0671		
124	0.4979	0.1345	0.4495	0.0615	0.0899	0.110578735	0.12705249
125	0.4963	-0.0209	0.4674	0.0217	0.0043	0.118267798	-0.012706161
126	0.4908	0.0946	0.4901	-0.027	-0.0389	0.118878734	0.180624955
127	0.4978	0.0889	0.4894	0.0219	0.0506		
128	0.4964	0.1143	0.4497	-0.006	-0.0095	0.118267798	-0.012706161
129	0.4924	0.4284	0.4862	0.0287	-0.0007	0.118267798	-0.012706161
130	0.4976	0.1385	0.4479	0.0832	0.1143	0.118878734	0.180624955

TABLE 2 continued: Analyst reports – statement characteristics, finance variables, and analyst characteristics

No_	Optimism score	Certainty score	Activity score	Excess Returns (-1 0)	Excess Returns (-1 1)	D Equity	D Debt
130	0.4976	0.1385	0.4479	0.0832	0.1143	0.118878734	0.180624955
131	0.4934	0.1122	0.4896	0.0546	0.0413	0.058621499	-0.010282228
132	0.486	0.3178	0.5058	-0.0119	-0.0562	0.262441775	0.101771267
133	0.5104	0.4061	0.4656	-0.0023	0.0103	0.13385345	-0.000132579
134	0.487	0.3369	0.491				
135	0.4895	0.3865	0.4879	0.0968	0.0995		
136	0.4833	0.4184	0.4914	-0.0268	-0.0708	-0.194098326	-0.007486575
137	0.4971	0.3008	0.5078				
138	0.5132	0.4982	0.4977	-0.132	-0.1051		
139	0.5122	0.4806	0.4736			0.066429676	0.5475379
140	0.4974	0.0718	0.4801	0.0244	0.0263	0.108879123	-0.002226863
141	0.4917	0.2871	0.4546	0.0209	0.0625	0.021952601	
142	0.4893	0.4278	0.5048				
143	0.5021	0.3683	0.4985	-0.0494	-0.0822	0.122868867	0
144	0.4826	0.351	0.4896	0.0244	0.0333	0.071473354	0.021513659
145	0.5042	0.4325	0.4997	0.0203	0.0196	-0.18146284	-0.287133219
146	0.4827	0.4027	0.4965	0.1887	0.1746	0.210828465	0.011004062
147	0.52	0.4255	0.4908	-0.0612	-0.0792	-0.194098326	-0.007486575
148	0.5067	0.1683	0.4794	0.0006	0.0135	0.122868867	0
149	0.497	0.4551	0.5041	0.0353	0.0526	0.021952601	
150	0.4889	0.3177	0.4907	0.0457	0.0652	0.070432848	0.074591183
151	0.5123	0.3166	0.4647	0.0263	-0.0113	0.071473354	0.021513659
152	0.5067	0.2859	0.4734	-0.0143	0.011	0.007619567	-0.040693603
153	0.5203	0.4209	0.4732	0.0005	0.0083	-0.038051455	-0.247597552
154	0.4937	0.0064	0.478	0.0101	0.0085	0.095576682	-0.042232785
155	0.4946	0.4639	0.4886	0.0118	0.0135	-0.055073272	0.018114976
156	0.5198	0.4075	0.4953	0.0057	0.0103	0.203782293	0.213493651
157	0.5034	0.0767	0.4896	-0.0103	-0.0426	0.203782293	0.213493651
158	0.4954	0.1762	0.5154			-0.022580986	0.10989835
159	0.509	0.362	0.4897	-0.0272	-0.0439	-0.207953588	0.159972775
160	0.4866	0.3709	0.4825	-0.001	-0.0044	0.10968164	0
161	0.5052	0.0902	0.4447	0.0682	0.017	0.070432848	0.074591183
162	0.5004	0.451	0.5145	-0.0374	-0.0149	-0.038051455	-0.247597552
163	0.4984	0.013	0.48	-0.0026	0.0023		
164	0.4975	0.0061	0.4847	0.008	0.0119		
165	0.4975	0.0036	0.4858	-0.0237	-0.0007	0.033165401	0.085479789
166	0.4993	0.1268	0.4884	-0.0169	-0.0218	0.045124336	0.028392882
167	0.5035	0.3915	0.4968	0.0088	0.0207	0.107186297	-0.000168973
168	0.4932	0.0579	0.4826	-0.0146	-0.0218		
169	0.4832	0.3482	0.512	-0.0153	-0.0102	0.178990799	-0.003366753
170	0.4826	0.2823	0.5548	0.0046	0.0082	0.070432848	0.074591183
171	0.4912	0.2848	0.4774	0.0054	0.0187	0.045088044	0
172	0.5033	0.3299	0.478	0.0232	0.0589	0.096106494	-0.026815943
173	0.5024	0.3758	0.5106			0.053838846	0.309511114
174	0.5054	0.3391	0.4948			0.053838846	0.309511114
175	0.5126	0.4385	0.4965	0.0262	0.0421	0.056660036	-0.03270982
176	0.5029	0.3588	0.4953	-0.0202	-0.0194	-0.015248037	0.412519009
177	0.5069	0.364	0.4631	-0.0111	-0.0397		
178	0.5115	0.4601	0.5025	-0.0275	-0.0273	0.033165401	0.085479789
179	0.5239	0.3244	0.4898	-0.0454	-0.0532	1.000412205	0.108294853
180	0.4715	0.3524	0.2916	0.0591	0.0142	0.118267798	-0.012706161
181	0.4944	0.0689	0.487	0.0178	0.0227	0.130507529	0.017992677
182	0.5052	0.115	0.4765	-0.0211	0.0157	0.002934992	-0.00718416
183	0.4999	0.3924	0.4929	0.0232	0.0135	0.007455317	0
184	0.5125	0.3559	0.4362	0.0042	0.0386	0.262441775	0.101771267
185	0.4993	0.0759	0.4753	-0.0069	-0.0228	-0.02534939	0.014867678
186	0.5051	0.0995	0.4902	-0.0149	-0.0196	0.225822879	0.058205537
187	0.5045	0.096	0.4901	0.061	0.0603	0.049964832	-0.001361563
188	0.4999	0.0459	0.4885	-0.0056	-0.0312	0.130348678	-0.001494234
189	0.501	0.0885	0.4823	0.0558	0.0556	0.130348678	-0.001494234
190	0.4965	0.1165	0.4786	-0.01	-0.0161	0.094298597	0.069712056
191	0.5032	0.1426	0.4871	-0.0228	0.051	0.225822879	0.058205537
192	0.5107	0.4089	0.5014	0.0055	0.0175	0.130507529	0.017992677
193	0.5144	0.3947	0.4316	0.0174	0.0677	0.262441775	0.101771267
194	0.4982	0.0729	0.4905	0.0331	0.0156	0.031120942	-0.001022348
195	0.5027	0.401	0.4754	-0.0283	-0.0364	0.094298597	0.069712056

TABLE 2 continued: Analyst reports – statement characteristics, finance variables, and analyst characteristics

No_	Optimism score	Certainty score	Activity score	Excess Returns (-1 0)	Excess Returns (-1 1)	D Equity	D Debt
195	0.5027	0.401	0.4754	-0.0283	-0.0364	0.094298597	0.069712056
196	0.4974	0.0838	0.4868	-0.0516	-0.0389	0.262441775	0.101771267
197	0.4944	0.0079	0.4819	-0.0102	0.0015	0.058621499	-0.010282228
198	0.5076	0.4418	0.4994	-0.022	-0.0327	0.130348678	-0.001494234
199	0.4984	-0.0184	0.4773	0.0198	0.0199	0.069001927	-0.007707943
200	0.5095	0.3148	0.4837	-0.0163	0.0038	0.146687956	0.044879817
201	0.4966	-0.0191	0.479	0.017	0.0266	0.041103593	0.133633209
202	0.4944	-0.0094	0.4814	0.0459	0.0282	0.003907477	0.444397688
203	0.4941	-0.0374	0.4745	-0.0275	-0.0663		
204	0.5039	0.3501	0.476	-0.0044	-0.001	0.032624834	-0.003848558
205	0.4967	-0.0231	0.478	-0.0041	-0.0135	0.112562051	-0.00262434
206	0.4946	-0.009	0.4771	-0.02	-0.0147	0.203431284	-0.0817178
207	0.4953	-0.0185	0.4781	-0.0415	-0.0108	0.094298597	0.069712056
208	0.4945	-0.0068	0.4798	0.0058	0.0109	-0.143251336	-0.06458052
209	0.5083	0.3143	0.508	-0.0404	-0.0686	0.104121688	0
210	0.5025	0.336	0.4848	-0.0368	-0.0195	0.163179238	-0.025823195
211	0.5018	0.3376	0.4876	0.0165	0.0259	0.032624834	-0.003848558
212	0.5126	0.394	0.5018	-0.0226	-0.019	0.069001927	-0.007707943
213	0.5001	0.398	0.5159	-0.0026	-0.0009	-0.055073272	0.018114976
214	0.4971	0.4089	0.4863	-0.021	0.0211	0.003907477	0.444397688
215	0.4977	-0.0242	0.4797	0.023	0.0459	0.023112004	
216	0.5088	0.4066	0.4927	-0.0557	-0.0565	0.095576682	-0.042232785
217	0.4938	-0.0002	0.4797	0.0084	0.0095	-0.055073272	0.018114976
218	0.507	0.4548	0.4853	-0.016	-0.0179	0.053489566	0.007112767
219	0.4987	0.4501	0.4866	-0.0331	-0.0251	-0.007171867	0.05585751
220	0.4876	0.4541	0.4792	-0.0861	-0.0719	0.041103593	0.133633209
221	0.4813	0.4284	0.4844	0.0596	0.0375	0.203431284	-0.0817178
222	0.5324	0.4453	0.483	-0.0015	-0.0318	-0.143251336	-0.06458052
223	0.5144	0.3382	0.501	0.0278	0.0272	0.175591857	0.112902657
224	0.5047	0.3612	0.4649	-0.0229	-0.0312	-0.018140339	-0.02899758
225	0.4992	0.4433	0.4977	0.096	0.1029	0.056464161	0.072773821
226	0.5093	0.3232	0.5103	0.0487	0.0452	-0.032931451	0.096893282
227	0.5103	0.236	0.4755	-0.0147	0.009	0.122868867	-0.000115587
228	0.5055	0.4276	0.4845	0.017	-0.0097	0.10968164	0
229	0.5028	0.0953	0.4885	-0.0199	-0.0426	0.10968164	0
230	0.5013	0.4484	0.4797	-0.0004	0.0056	0.068477792	0.0639931
231	0.4649	0.4975	0.1138	-0.0139	-0.074	-0.019590205	0.09854073
232	0.5082	0.292	0.4899	0.0889	0.1217	0.031120942	-0.001022348
233	0.5122	0.3928	0.5018	-0.2503	-0.256	0.023915363	-0.008426845
234	0.5008	0.5335	0.2621	-0.1265	-0.1272		
235	0.4994	0.0665	0.4872	0.0251	0.0308	0.024244846	0.032417266
236	0.5056	0.3063	0.4887	-0.0032	-0.004	-0.011747917	0.010068567
237	0.5084	0.0685	0.4755	-0.001	-0.0033		
238	0.4981	0.1101	0.4928	0.0302	0.0407	0.053341118	0
239	0.5037	0.4681	0.4673	0.017	0.0304	0.096106494	-0.026815943
240	0.4858	0.3617	0.49	0.0423	0.0219		
241	0.4901	0.4752	0.4816	0.0172	0.0565		
242	0.5247	0.3464	0.4488	0.0028	0.0257	-0.298947739	0.056527634
243	0.5011	0.3855	0.4953	-0.0069	0.007	0.024244846	0.032417266
244	0.4967	0.3062	0.4857	-0.0252	-0.0295	-0.011747917	0.010068567
245	0.5129	0.3981	0.4843	-0.005	-0.0057		
246	0.4954	0.4215	0.4875	0.0213	0.0174	0.192069183	0.011397416
247	0.4952	0.2027	0.4889	0.0304	0.0084	0.031120942	-0.001022348
248	0.5012	0.0982	0.4879	-0.0131	-0.0309	0.210828465	0.011004062
249	0.4849	0.4135	0.4917	-0.0493	-0.1116	0.021952601	
250	0.4838	0.271	0.5105	-0.0679	-0.0584	-0.026100352	0
251	0.4834	0.4092	0.5186	-0.0339	-0.0118	0.059074427	0.018224374
252	0.4877	0.0471	0.4696	0.0072	-0.0257	0.145472842	
253	0.503	0.2032	0.503	0.0809	0.0872	0.00227188	-0.010802591
254	0.4966	0.0455	0.4655	0.1086	0.0923	0.00227188	-0.010802591
255	0.5032	0.312	0.4949	-0.072	-0.0455	0.73475557	-0.651020951
256	0.4986	0.2905	0.4823	0.0092	0.0023		
257	0.4998	0.2986	0.483	0.0052	0.0012	0.107186297	-0.000168973
258	0.4982	0.1417	0.4968	-0.0162	-0.0401	0.107186297	-0.000168973
259	0.5635	0.346312214	0.48273615			0.097962094	0.5475379
260	0.5635	0.346312214	0.48273615			0.097962094	-0.65102095

TABLE 2 continued: Analyst reports – statement characteristics, finance variables, and analyst characteristics

No_	Firm Size Assets	Firm Size Equity	D Sec Iss	IBES Rec_ Code	Frcst freq Rev	Largest decile?	. Cos followed	#2 digit SICs	Gen Exp	Firm Exp	Lagged frcst acc.
1	1294.585	362.0395	-545		2						
2	150.5725	35.715			1						
3	513.9725	220.6265	1361		3						
4	201.3275	203.625	158		3						
5	605.44	438.015	222		1						
6	816.528	289.1535	-477		2						
7	66.772	55.671	-462		2						
8	1648.605	644.486	-584		3	2	1	27	6	3	2 -0.147025172
9	813.41	366.026	-226		3	4	1	27	6	3	3 0.294117647
10	37.472	18.3145	-190								
11	1011.35	431.419	4381		3	4	1	27	6	3	3 -0.62686567
12	275.5	183.7335	303			1	1	27	6	3	3 -0.333333333
13	3088.275	2061.005	-2572		1	2					
14	784.285	429.46	1672		1	2					
64											
15	247.905	212.03	100		1						
65											
16	562.63	383.195	52		1						
17	23438.5	11421.5	-232		1						
18	9287.5	4096	-1866		1						
19											
20	3263.2	2199.1	2421		1						
21											
22	844.99	600.135	-749		1	3	1	27	6	3	2 -0.44
23	3301.685	2076.965	131		1	3	1	27	6	3	3 -0.722222222
24	165.2275	133.4545			2	3	1	27	6	3	3 0
25	241.5205	103.0535	264		1	1	1	27	6	3	2 0.625
26	293.144	253.86	2653		2	3	1	27	6	3	3 -1
27	194.8035	165.5225	565		1	2	1	27	6	3	3 -1
28	22.1155	12.2005	243		1	4	1	27	6	3	2
29					3	3	1	27	6	3	2 0
30	629.534	470.609	-106		3	7	1	27	6	3	2 -1
31	220.2915	140.568	-1794		2	5	1	27	6	3	3 1
32	826.007	502.524	97		2	5	1	27	6	3	2 -0.180327869
33	412.2375	323.209	-1908		2	3	1	27	6	3	3 -0.193548387
34	813.41	366.026	-281		3	4	1	27	6	3	3 0.294117647
35					2	3	1	27	6	3	3 -0.111111111
36	613.8235	446.098	-269		2	4	1	27	6	3	2 -0.533333333
37	1322.62	723.3025	6364		3	6	1	27	6	3	2 0.27172641
38	439.7295	326.589	-91		2	5	1	27	6	3	3 -0.708029197
39	1060.325	800.9305	-2479		1	6	1	27	6	3	3 -0.871428571
40	4463.79	1572.55	546		2	3	1	27	6	3	3 -0.868917577
41	1648.605	644.486			3	2	1	27	6	3	2 -0.147025172
42	92.4915	80.6275	-220			1	1	27	6	3	2
43	275.5	183.7335	309			1	1	27	6	3	3 -0.333333333
44	71.27	31.702	1684		3	1	1	27	6	3	2 -0.251407129
45	1011.35	431.419	4326		3	4	1	27	6	3	3 -0.626865672
46	377.248	302.072	711			2	1	27	6	3	3 -1
47					3						
48	72218	18784.5	-14		1						
49	381.6515	177.3465	-83		3						
50	32224	12537			2						
51	21139.5	10131.5	-532		1						
52	16074.45	6601.1	-594		3						
53	5216.145	2023.101	-240		2						
54	22725.75	6545.4	-257		2						
55					3						
56	26939.55	6569.25	1745		2						
57	16224.5	2481.5			2						
58	37720.5	7103.5	-756		2						
59					1						
60	2786.05	1663	4247		1						
61	72218	18784.5	-5		2	2	0	18	2	9	9 0.100478469
62	21139.5	10131.5	-482		2	2	0	18	2	9	9 0.929824561
63	16074.45	6601.1	-544		2						
64					2						
65					2						

TABLE 2 continued: Analyst reports – statement characteristics, finance variables, and analyst characteristics

No_	Firm Size Assets	Firm Size Equity	D Sec Iss	IBES Rec_ Code	Frcst freq Rev	Largest decile?	. Cos followed	#2 digit SICs	Gen Exp	Firm Exp	Lagged frcst acc.
66	8651.5	6640.5	3241	2	4	1	16	4	9	5	-0.537486096
67	2786.05	1663	4170	1							
68	129.0585	102.5635	607	1							
69	75.8915	49.1485	153	2	3	0	19	3	12	1	
70	20619.5	15006	8535	1							
71	921.509	536.9825	3737	1							
72	746.883	312.717	2553	1							
73	1187.765	703.3845	-71	1							
74	165.2275	133.4545		3							
75	37.352	-0.026		3							
76	37.352	-0.026		3							
77	9172	5379	-2003	1	4	1	16	4	9	5	-0.463806971
78	948.51	738.1395	3083	2	2	1	16	4	9	5	-0.166666667
79	9172	5379	-2030	1	4	1	16	4	9	5	-0.463806971
80	8651.5	6640.5	3218	1	4	1	16	4	9	5	-0.537486096
81	180.9915	147.215	1142	1	5	1	16	4	9	1	
82	54.14	10.765		3	3	1	16	4	9	2	-0.114754098
83	319.801	199.148	2070	2	7	1	16	4	9	4	0.038888889
84	319.801	199.148	2071	2	7	1	16	4	9	4	0.038888889
85	92.4915	80.6275	53		1	1	27	6	3	2	
86	3301.685	2076.965	-139	1	3	1	27	6	3	3	-0.722222222
87	263.562	198.1685	-133		2	1	27	6	3	1	
88				3							
89	746.88	312.72	2672	1							
90	1187.765	703.385	48	1							
91	165.2275	133.4545		1							
92	293.145	253.86	2848	1	2	1	3	2	1	1	
93	921.505	536.985	3856	1							
94	20619.5	15006	8654	1							
95	562.63	383.195	248	1	3	1	3	2	1	1	
96	2786.05	1663	4366	1							
97	72218	18784.5	197	3							
98	20619.5	15006	8591	1							
99	746.88	312.72	2742	1							
100	1187.765	703.385	118	1							
101	165.2275	133.4545		3							
102	921.505	536.985	3926	1							
103	20619.5	15006	8724	1							
104	562.63	383.195	318	1	3	1	3	2	1	1	
105	2786.05	1663	4436	1							
106	37.235	22.8465									
107	3088.275	2061.005	-2737	3							
108	165.2275	133.4545		1							
109	293.145	253.86	2786	1							
110	20619.5	15006	8592	1							
111	562.63	383.195	186	1	3	1	3	2	1	1	
112	2786.05	1663	4304	1							
113	9287.5	4096	20961	3							
114	93.825	50.495	2608	3							
115	844.99	600.135	-697	1							
116	3088.275	2061.005	-2818	3							
117	1027.2	416.435	380	2							
118	1187.765	703.385	-95	1							
119	20619.5	15006	8511	1							
120	562.63	383.195	105	2							
121	23438.5	11421.5	-179	2							
122	129.0585	102.5635	660	1							
123				2							
124	9287.5	4096	19054	1							
125	2786.05	1663	4348	3							
126	1187.765	703.385	-131	1							
127				1							
128	2786.05	1663	4516	3							
129	2786.05	1663	4202	3							
130	1187.765	703.385	134	1							

TABLE 2 continued: Analyst reports – statement characteristics, finance variables, and analyst characteristics

No_	Firm Size Assets	Firm Size Equity	D Sec Iss	IBES Rec_ Code	Frcst freq Rev	Largest decile?	. Cos followed	#2 digit SICs	Gen Exp	Firm Exp	Lagged frcst acc.
129	2786.05	1663	4202		3						
130	1187.765	703.385	134		1						
131	23438.5	11421.5	-125		1						
132	3263.2	2199.1	6091		1						
133	392.22	141.365	152		2	2	0	19	3	12	1
134											
135					3	4	0	19	3	12	3
136	95.905	67.275	181								
137											
138					2						
139	313.655	135.065	27								
140	75.8915	49.1485	377		2	3	0	19	3	12	1
141	759.09	418.23	1525		2	3	0	19	3	12	5 -0.179487179
142	2188.28	1434.38	6870								
143	8651.5	6640.5	3528		2	5	0	19	3	12	9 -0.816462736
144	111.65	68.075	90		2	3	0	19	3	12	1
145	37.352	-0.026			3						
146	427.115	204.975	650		2	3	0	19	3	12	3 -0.11627907
147	95.905	67.275	168								
148	8651.5	6640.5	3270		2	5	0	19	3	12	9 -0.816462736
149	759.09	418.23	1298		2	3	0	19	3	12	5 -0.179487179
150	3990.78	2120.08	-497		2	5	0	19	3	12	7 0.092288243
151	111.65	68.075	35		2	3	0	19	3	12	1
152	238.465	118.445	-512		2						
153	72218	18784.5	38		1						
154	151.47	118.885			2	3	0	17	3	11	4 -1
155	2456.255	1767.765	-1098		3	2	1	19	4	7	6 -0.753909465
156	844.99	600.135	-736		2	3	0	31	5	12	3 -0.44
157	844.99	600.135	-399		1	3	0	31	5	12	3 -0.44
158	2843.1	1150.278	-248			2	0	46	5	2	1
159	154.27	81.715	1514			1	0	46	5	2	1
160	9172	5379	-2009		2	4	0	7	3	1	1
161	3990.78	2120.08	-428		1						
162	72218	18784.5	-33		1						
163					2						
164					3						
165	21139.5	10131.5	-247		2						
166	3520.495	2205.985	10608		2	2	0	8	3	3	2 -0.76
167	2118.685	1701.555	3537		3	3	0	10	3	3	3 -0.396825397
168	57.13	36.59			2	4	0	12	3	2	1
169	121.185	95.255	1126		3	5	1	18	4	12	2 -0.625
170	3990.78	2120.08	-425		2	3	1	16	3	8	3 -0.382498304
171	215.8	103.355	2722		3						
172	2599.2	1867.75	-708		2	5	0	8	2	2	2 -0.244256348
173	1847.365	999.07	1933			5	0	18	2	9	9 -0.216326531
174	1847.365	999.07	1942			5	0	18	2	9	9 -0.216326531
175	13699.25	10802.645	1166		2	4	0	18	2	9	4 0.789156627
176	243.31	137.976									
177	1867.13	830.331	1238		2	3	0	18	2	9	1
178	21139.5	10131.5	-422		2	2	0	18	2	9	9 0.929824561
179	13248.275	7573.63	-424								
180	2786.05	1663	4235		3	4	0	31	5	12	1
181	20619.5	15006	8586		1	4	0	31	5	12	7 -0.880184332
182	228.28	165.47	246		1	5	0	31	5	12	2 0
183	921.49	463.66	597		3	4	0	31	5	12	8 -0.517073171
184	3263.2	2199.1	6016		3						
185	80712	22025.5	-161		2	4	0	31	5	12	5 0.672535211
186	4300.45	2003.93			1	2	0	31	5	12	10 -0.492957746
187	1549.69	926.54	427		2	2	0	31	5	12	1
188	1398.71	685.53	470		3	2	0	31	5	12	1
189	1398.71	685.53	526		3	2	0	31	5	12	1
190	3088.275	2061.005	-2686		3	4	0	31	5	12	7 -0.81858382
191	4300.45	2003.93			1	2	0	31	5	12	10 -0.492957746
192	20619.5	15006	8472		1	4	0	31	5	12	7 -0.880184332
193	3263.2	2199.1	6021		3						
194	10011.265	3567.245	722		3	1	0	31	5	12	1
195	3088.275	2061.005	-2682		3	4	0	31	5	12	7 -0.81858382

TABLE 2 continued: Analyst reports – statement characteristics, finance variables, and analyst characteristics

No_	Firm Size Assets	Firm Size Equity	D Sec Iss	IBES Rec_ Code	Frcst freq Rev	Largest decile?	. Cos followed	#2 digit SICs	Gen Exp	Firm Exp	Lagged frcst acc.
194	10011.265	3567.245	722		3	1	0	31	5	12	1	
195	3088.275	2061.005	-2682		3	4	0	31	5	12	7	-0.81858382
196	3263.2	2199.1	6221		3							
197	23438.5	11421.5	-218		3	4	0	31	5	12	6	-0.292006525
198	1398.71	685.53	475		3	2	0	31	5	12	1	
199	18941.5	9940.5	188		3	4	0	17	3	11	2	-0.506849315
200	1158.65	769.67	5326		3	4	0	17	3	11	3	-0.775128069
201	257.885	131.38	1629		3							
202	365.965	119.955	306		2							
203	394.96	281.85			3	4	0	17	3	11	8	0.106382979
204	255.94	200.21	1309		3	2	0	17	3	11	4	-0.370967742
205	158.135	127.425	4716		3	3	0	29	6	12	1	
206	1390.15	897.45	-334		3	2	0	17	3	11	3	-0.161764706
207	3088.275	2061.005	-1521		3							
208	8516.5	3104	-456		2	2	0	17	3	11	4	-0.567567568
209	101.9	83.15			3	2	0	29	6	12	1	
210	30.825	22.655	1461		3	3	0	29	6	12	1	
211	255.94	200.21	1209		3	2	0	17	3	11	4	-0.370967742
212	18941.5	9940.5	366		3	4	0	17	3	11	2	-0.506849315
213	2456.255	1767.765	-1270		2	6	0	29	6	12	5	-0.298122066
214	365.965	119.955	460		2							
215	1293.7	846.83	-903		1	4	0	17	3	11	2	0.44
216	151.47	118.885			1	3	0	17	3	11	4	-1
217	2456.255	1767.765	-1186		2	6	0	29	6	12	5	-0.298122066
218	1129.94	692.05	16090		1	1	1	20	7	8	8	-0.533333333
219	2576.735	905.6	29976		1	2	1	19	4	7	2	-0.27761194
220	257.885	131.38	1352		2							
221	1390.15	897.45	-370		4	2	1	19	4	7	6	-0.720588235
222	8516.5	3104	-673		2	1	1	19	4	7	6	-0.567567568
223	7085.75	4406.35	475		1							
224	28930	12344.1										
225	3470.52	1184.86	-314		1							
226	815.33	328.18	1367		2							
227	8651.5	6640.5	3562		2							
228	9172	5379	-1694		3	2	0	4	2	11	10	-0.892761394
229	9172	5379	-1730		3	2	0	4	2	11	10	-0.892761394
230	5797.5	2479.5	553		2	1	0	4	2	11	9	-0.893665734
231	100.05	51.92	358		2							
232	10011.265	3567.245	855		1							
233	623.365	498.935	3675		3							
234					3							
235	11012.65	4858.3	10337		2	1	0	8	3	3	2	-1
236	13278.95	3427.45	868		2	1	0	8	3	3	2	-0.62962963
237					2	2	0	8	3	3	2	-0.882352941
238	710.765	221.175	4339		3	1	0	7	3	4	2	-0.265306122
239	2599.2	1867.75	-744		2							
240					2							
241	433.811	390.115			1							
242	1589.435	718.635	1626		3							
243	11012.65	4858.3	10357		1	3	0	12	3	2	2	-0.368421053
244	13278.95	3427.45	843			1	0	12	3	2	1	
245	57.132	36.585			2	4	0	12	3	2	1	
246	937.23	734.685	2232			2	0	12	3	2	2	-0.863215488
247	10011.265	3567.245	888		2							
248	427.115	204.975	631			4	1	24	3	7	3	-0.11627907
249	759.09	418.23	1344		3	5	1	24	3	7	3	-0.58974359
250	2233.15	1802.96	2996		2	5	1	24	3	7	2	0.591836735
251	1800.83	1098.38			3							
252	556.475	441.68	2118		1							
253	3672.73	2187.045	-1466		1							
254	3672.73	2187.045	-1330		1							
255	300.7	103.255	-422			1	0	8	2	2	1	
256	433.81	390.12			3	2	0	8	2	2	2	-0.214285714
257	2118.685	1701.555	3934		3	2	0	8	2	2	1	
258	2118.685	1701.555	3667			2	0	8	2	2	1	
259												
260												

TABLE 3: Means and standard deviations of the variables

Mean(Optimism score)	0.499988846
Mean(Certainty score)	0.300912017
Mean(Activity score)	0.47596553
Mean(Excess Returns (-1 0))	0.003026613
Mean(Excess Returns (-1 1))	0.005280645
Mean(D Equity)	0.083012564
Mean(D Debt)	0.019979857
Mean(Firm Size Assets)	6288.720411
Mean(Firm Size Equity)	2797.626815
Mean(D Securities Issuance)	1708.238095
Mean(IBES Rec. Code)	1.965217391
Mean(Forecast freq. Revision)	3.115384615
Mean(Largest decile?)	0.423076923
Mean(# cos followed)	20.96923077
Mean(# of 2 digit SICs)	4.153846154
Mean(Gen. Experience)	7.223076923
Mean(Firm experience)	3.469230769
Mean(Lagged forecast accuracy)	-0.356517195
Std Dev(Optimism score)	0.015584947
Std Dev(Certainty score)	0.150554279
Std Dev(Activity score)	0.050966087
Std Dev(Excess Returns (-1 0))	0.04637731
Std Dev(Excess Returns (-1 1))	0.053482521
Std Dev(D Equity)	0.140966131
Std Dev(D Debt)	0.129845822
Std Dev(Firm Size Assets)	12972.79645
Std Dev(Firm Size Equity)	4488.592226
Std Dev(D Securities Issuance)	3899.069725
Std Dev(IBES Rec. Code)	0.82462573
Std Dev(Forecast freq. Revision)	1.433998126
Std Dev(Largest decile?)	0.495958623
Std Dev(# cos followed)	8.677636285
Std Dev(# of 2 digit SICs)	1.49656733
Std Dev(Gen. Experience)	4.189809314
Std Dev(Firm experience)	2.558428725
Std Dev(Lagged forecast accuracy)	0.472000706

TABLE 4: Correlations

Row	Opt Score	Cert Score	Act Score	Exc Ret (-1 0)	Exc Ret (-1 1)	D Equity	D Debt	Firm Assets	Firm Equity
Optimism score	1.00	0.36	0.00	-0.16	-0.07	0.14	-0.04	0.05	0.05
Certainty score	0.36	1.00	0.30	0.17	0.13	0.19	-0.02	-0.11	-0.12
Activity score	0.00	0.30	1.00	0.08	0.09	0.14	0.15	0.00	0.01
Excess Returns (-1 0)	-0.16	0.17	0.08	1.00	0.90	0.16	0.02	-0.05	-0.09
Excess Returns (-1 1)	-0.07	0.13	0.09	0.90	1.00	0.12	0.02	-0.07	-0.08
D Equity	0.14	0.19	0.14	0.16	0.12	1.00	0.19	-0.25	-0.20
D Debt	-0.04	-0.02	0.15	0.02	0.02	0.19	1.00	-0.26	-0.20
Firm Size Assets	0.05	-0.11	0.00	-0.05	-0.07	-0.25	-0.26	1.00	0.90
Firm Size Equity	0.05	-0.12	0.01	-0.09	-0.08	-0.20	-0.20	0.90	1.00
D Securities Issuance	-0.01	0.06	-0.04	-0.22	-0.14	-0.13	-0.02	-0.03	0.03
IBES Rec. Code	-0.16	-0.12	-0.14	0.01	0.00	-0.10	-0.26	-0.07	-0.13
Forecast freq. Revision	-0.01	-0.12	-0.01	0.00	0.08	-0.10	0.04	-0.09	-0.02
Largest decile?	0.08	0.32	0.04	0.02	-0.05	0.20	-0.03	-0.35	-0.42
# cos followed	0.10	-0.02	0.08	0.04	0.03	0.22	0.18	-0.01	-0.03
# of 2 digit SICs	0.16	0.05	0.00	0.07	0.03	0.29	0.16	-0.27	-0.34
Gen. Experience	-0.21	-0.23	-0.11	-0.15	-0.17	-0.23	0.03	0.27	0.38
Firm experience	-0.02	0.12	-0.09	-0.08	-0.19	-0.21	-0.08	0.34	0.45
Lagged forecast accuracy	0.01	0.06	0.04	0.02	0.04	-0.07	0.11	0.24	0.16

Row	D Sec Iss	IBES Code	Frcst freq_ Rev	Largest decile?	. cos followed
Optimism score	-0.01	-0.16	-0.01	0.08	0.10
Certainty score	0.06	-0.12	-0.12	0.32	-0.02
Activity score	-0.04	-0.14	-0.01	0.04	0.08
Excess Returns (-1 0)	-0.22	0.01	0.00	0.02	0.04
Excess Returns (-1 1)	-0.14	0.00	0.08	-0.05	0.03
D Equity	-0.13	-0.10	-0.10	0.20	0.22
D Debt	-0.02	-0.26	0.04	-0.03	0.18
Firm Size Assets	-0.03	-0.07	-0.09	-0.35	-0.01
Firm Size Equity	0.03	-0.13	-0.02	-0.42	-0.03
D Securities Issuance	1.00	-0.26	-0.18	0.03	-0.17
IBES Rec. Code	-0.26	1.00	-0.02	-0.16	-0.14
Forecast freq. Revision	-0.18	-0.02	1.00	0.12	0.36
Largest decile?	0.03	-0.16	0.12	1.00	0.26
# cos followed	-0.17	-0.14	0.36	0.26	1.00
# of 2 digit SICs	-0.04	-0.19	0.25	0.58	0.79
Gen. Experience	-0.10	0.09	0.12	-0.57	-0.01
Firm experience	-0.11	0.05	-0.12	-0.36	-0.16
Lagged forecast accuracy	-0.11	-0.01	0.10	0.02	0.12

Row	. of 2 digit SICs	Gen_ Experience	Firm experience	Lag frcst acc
Optimism score	0.16	-0.21	-0.02	0.01
Certainty score	0.05	-0.23	0.12	0.06
Activity score	0.00	-0.11	-0.09	0.04
Excess Returns (-1 0)	0.07	-0.15	-0.08	0.02
Excess Returns (-1 1)	0.03	-0.17	-0.19	0.04
D Equity	0.29	-0.23	-0.21	-0.07
D Debt	0.16	0.03	-0.08	0.11
Firm Size Assets	-0.27	0.27	0.34	0.24
Firm Size Equity	-0.34	0.38	0.45	0.16
D Securities Issuance	-0.04	-0.10	-0.11	-0.11
IBES Rec. Code	-0.19	0.09	0.05	-0.01
Forecast freq. Revision	0.25	0.12	-0.12	0.10
Largest decile?	0.58	-0.57	-0.36	0.02
# cos followed	0.79	-0.01	-0.16	0.12
# of 2 digit SICs	1.00	-0.39	-0.33	-0.09
Gen. Experience	-0.39	1.00	0.57	-0.03
Firm experience	-0.33	0.57	1.00	-0.07
Lagged forecast accuracy	-0.09	-0.03	-0.07	1.00

TABLE 5: Power

Alpha = 0.1 Delta = 10% of the coefficent estimate

N = 219			
Regression Equation	**Ia**	**Ib**	
Sigma	0.0529	0.0530	
Independent Variable (below)	**Power**	**Power**	
Optimism Score	0.7211	0.7891	
Certainty Score	0.1750	0.1746	
Activity Score	0.9996	0.9996	
D Equity	0.1295	0.1294	
D Debt	0.4785	0.4770	
Firm Size Equity	0.1000	0.1000	
Optimism Score * Firm Size Equity	0.1000	0.1000	
Optimism Score * Activity Score		0.6084	
Regression Equation	**IIa/f**	**IIb**	**IIe**
Dependent Variable ---->	**Optimism Score**	**Certainty Score**	**Activity Score**
N	**203**	**203**	**202**
Sigma	0.0151	0.1472	0.0534
Independent Variable (below)	**Power**	**Power**	**Power**
D Equity	0.2749	0.1318	0.1171
D Debt	0.1519	0.2831	0.1736
D Securities Issuance	0.1000	0.1000	0.1000
N = 202			
Regression Equation	**IIc**	**IId**	
Sigma	0.0151	0.0519	
Variable	**Power**	**Power**	
D Equity	0.2749	0.1009	
D Debt	0.1519	0.2751	
D Securities Issuance	0.1000	0.1000	
Optimism Score	1.0000	1.0000	
Optimism Score * D Equity	1.0000	1.0000	

TABLE 5 continued: Power

Alpha = 0.1 Delta = 10% of the coefficent estimate

N = 106 D Equity Regression Equation IVa				
Analyst Characteristic	**Forecast frequency**	**Largest decile**	**# firms followed**	**# industries**
Sigma	0.0114	0.0014	0.0014	0.0013
Independent Variable (below)	**Power**	**Power**	**Power**	**Power**
IBES Rec. Code [1]	1.0000	0.1515	0.1440	0.1427
IBES Rec. Code [2]	0.1197	0.1266	0.1198	0.9893
IBES Rec. Code [3]	0.1104	0.1184	0.1111	0.1097
D Equity	0.5930	0.3517	0.4538	0.2063
Analyst Characteristic	0.1000	0.1031	0.1000	0.1948
D Equity * Analyst Characteristic	0.1715	0.2335	0.1085	0.1010
Analyst Characteristic	**General experience**	**Firm Experience**	**Lagged Forecast**	
Sigma	0.0113	0.0112	0.0014	
Independent Variable (below)	**Power**	**Power**	**Power**	
IBES Rec. Code [1]	0.1484	0.1544	0.1320	
IBES Rec. Code [2]	0.1217	0.1103	0.1222	
IBES Rec. Code [3]	0.1144	0.1082	0.1143	
D Equity	0.3885	0.2945	0.4922	
Analyst Characteristic	0.1002	0.1002	0.1000	
D Equity * Analyst Characteristic	0.1170	0.2945	0.1206	

N = 102 D Debty Regression Equation IVa				
Analyst Characteristic	**Forecast frequency**	**Largest decile**	**# firms followed**	**# industries**
Sigma	0.0116	0.0014	0.0016	0.0015
Independent Variable (below)	**Power**	**Power**	**Power**	**Power**
IBES Rec. Code [1]	0.1634	0.1660	0.1701	0.1606
IBES Rec. Code [2]	0.1168	0.1279	0.1199	0.1200
IBES Rec. Code [3]	0.1082	0.1161	0.1701	0.1065
D Debt	0.4630	0.4066	0.8714	0.6062
Analyst Characteristic	0.1000	0.1029	0.1000	0.1016
D Debt * Analyst Characteristic	0.1028	0.7387	0.1123	0.1025
Analyst Characteristic	**General experience**	**Firm Experience**	**Lagged Forecast**	
Sigma	0.0114	0.0116	0.0014	
Independent Variable (below)	**Power**	**Power**	**Power**	
IBES Rec. Code [1]	0.1556	0.1650	0.1391	
IBES Rec. Code [2]	0.1191	0.1175	0.1154	
IBES Rec. Code [3]	0.1107	0.1097	0.1092	
D Debt	0.2542	0.4639	0.3198	
Analyst Characteristic	0.1003	0.1001	0.1001	
D Debt * Analyst Characteristic	0.1535	0.1067	0.1001	

TABLE 6: Hypotheses and Research Questions results

Hyp.	Elements		Support/Relationship?	p value	Alpha
H1					
a. Hi Opt.	Exc Ret. –1 1	Firm Size Equity	No		
b. Hi Opt.	Exc Ret. –1 0	Firm Size Equity	No		
c. Low Opt.	Exc Ret. –1 1	Firm Size Equity	No		
d. Low Opt.	Exc Ret. –1 1	Firm Size Equity	No		
e. Hi Opt.	Exc Ret. –1 1	Firm Size Assets	No		
f. Hi Opt.	Exc Ret. –1 0	Firm Size Assets	No		
g. Low Opt.	Exc Ret. –1 1	Firm Size Assets	No		
h. Low Opt.	Exc Ret. –1 0	Firm Size Assets.	No		
H2					
a. DEquity			No		
b. DDebt			No		
H3					
a. Exc Returns –1 1		Firm Size Equity	No		
b. Exc Returns –1 0		Firm Size Equity	No		
c. Exc Returns –1 0		Firm Size Assets	No		
d. Exc Returns –1 0		Firm Size Assets	No		
High Opt. Score Group					
e. Exc Returns –1 1		Firm Size Equity	No		
f. Exc Returns –1 0		Firm Size Equity	No		
g. Exc Returns –1 1		Firm Size Assets	No		
h. Exc Returns –1 0		Firm Size Assets	No		
i. Exc Returns –1 1	Large Firm Size Equity		Yes	0.0435	0.05
j. Exc Returns –1 0	Large Firm Size Equity		No		
k. Exc Returns –1 1	Small Firm Size Equity		No		
l. Exc Returns –1 0	Small Firm Size Equity		No		
m. Exc Returns –1 1	Large Firm Size Assets		Yes	0.0315	0.05
n. Exc Returns –1 0	Large Firm Size Assets		No		
o. Exc Returns –1 1	Small Firm Size Assets		No		
p. Exc Returns –1 0	Small Firm Size Assets		No		
H4			No		

TABLE 6 continued: Hypotheses and Research Questions results

Hyp.	Elements		Support/Relationship?	p value	Alpha
H5					
a. Hi Cert. Exc Ret. –1 1		Firm Size Equity	No		
b. Hi Cert. Exc Ret. –1 0		Firm Size Equity	No		
c. Low Cert. Exc Ret. –1 1		Firm Size Equity	No		
d. Low Cert. Exc Ret. –1 1		Firm Size Equity	No		
e. Hi Cert. Exc Ret. –1 1		Firm Size Assets	No		
f. Hi Cert. Exc Ret. –1 0		Firm Size Assets	No		
g. Low Cert. Exc Ret. –1 1		Firm Size Assets	No		
h. Low Cert. Exc Ret. –1 0		Firm Size Assets.	No		
RQ1					
a. Exc Ret. –1 1		Firm Size Equity	No		
b. Exc Ret. –1 0		Firm Size Equity	No		
c. Exc Ret. –1 1		Firm Size Assets	No		
d. Exc Ret. –1 1		Firm Size Assets	No		
RQ2					
a. Hi Act. Exc Ret. –1 1		Firm Size Equity	No		
b. Hi Act. Exc Ret. –1 0		Firm Size Equity	No		
c. Hi Act. Exc Ret. –1 1		Firm Size Assets	No		
d. Hi Act. Exc Ret. –1 1		Firm Size Assets	No		
e. Low Act. Exc Ret. –1 1		Firm Size Equity	Rel'ship-exp. dir'n.	0.0437	0.05
f. Low Act. Exc Ret. –1 0		Firm Size Equity	Rel'ship-exp. dir'n.	0.0362	0.05
g. Low Act. Exc Ret. –1 1		Firm Size Assets	Rel'ship-exp. dir'n.	0.0880	0.1
h. Low Act. Exc Ret. –1 0		Firm Size Assets.	Rel'ship-exp. dir'n.	0.0681	0.1
H6					
a. D Equity			No		
b. DDebt			No		
High Opt. Score Group					
c. DEquity			No		
d. DDebt			No		
Low Opt. Score Group					
e. DEquity			No		
f. DDebt			No		
H7					
a. D Equity			No		
b. DDebt			No		
High Cert. Score Group					
c. DEquity			No		
d. DDebt			No		
Low Cert. Score Group					
e. DEquity			No		
f. DDebt			No		

Rel'ship-exp. dir'n.: Relationship – expected direction

TABLE 6 continued: Hypotheses and Research Questions results

Hyp.	Elements	Support/Relationship?	p value	Alpha
RQ3				
a. D Equity		Relationship-opposite to predicted direction	0.0656	0.1
b. DDebt		Relationship-opposite to predicted direction	0.08	0.1
RQ4				
a. D Equity		No		
b. DDebt		No		
High Act. Score Group				
c. DEquity		No		
d. DDebt		No		
Low Act. Score Group				
e. DEquity		No		
f. DDebt		No		
H8		No		

TABLE 6 continued: Hypotheses and Research Questions results

Hyp.	Elements		Support/Relationship?	p value	Alpha
H9					
a. Exc Returns –1 0	Forecast Freq.	Lo Opt.	No		
b. Exc Returns –1 0	Forecast Freq.	Hi Opt.	Yes	0.0684	0.1
c. Exc Returns –1 1	Forecast Freq.	Lo Opt.	No		
d. Exc Returns –1 1	Forecast Freq.	Hi Opt.	Yes	0.03	0.05
e. Exc Returns –1 0	Decile?	Lo Opt.	Yes	0.08	0.1
f. Exc Returns –1 0	Decile?	Hi Opt.	No		
g. Exc Returns –1 1	Decile?	Lo Opt.	Yes	0.02	0.05
h. Exc Returns –1 1	Decile?	Hi Opt.	No		
i. Exc Returns –1 0	#firms followed	Lo Opt.	No		
j. Exc Returns –1 0	#firms followed	Hi Opt.	No		
k. Exc Returns –1 1	#firms followed	Lo Opt.	No		
l. Exc Returns –1 1	#firms followed	Hi Opt.	No		
m. Exc Returns –1 0	#2 digit SICs	Lo Opt.	No		
n. Exc Returns –1 0	#2 digit SICs	Hi Opt.	No		
o. Exc Returns –1 1	#2 digit SICs	Lo Opt.	No		
p. Exc Returns –1 1	#2 digit SICs	Hi Opt.	No		
q. Exc Returns –1 0	Gen. Exp.	Lo Opt.	Yes	0.0498	0.05
r. Exc Returns –1 0	Gen. Exp.	Hi Opt.	No		
s. Exc Returns –1 1	Gen. Exp.	Lo Opt.	No		
t. Exc Returns –1 1	Gen. Exp.	Hi Opt.	No		
u. Exc Returns –1 0	Firm Exp.	Lo Opt.	No		
v. Exc Returns –1 0	Firm Exp.	Hi Opt.	No		
w. Exc Returns –1 1	Firm Exp.	Lo Opt.	No		
x. Exc Returns –1 1	Firm Exp.	Hi Opt.	No		
y. Exc Returns –1 0	Lagged frcst	Lo Opt.	No		
z. Exc Returns –1 0	Lagged frcst	Hi Opt.	No		
aa. Exc Returns –1 1	Lagged frcst	Lo Opt.	No		
ab. Exc Returns –1 1	Lagged frcst	Hi Opt.	No		

TABLE 6 continued: Hypotheses and Research Questions results

Hyp.	Elements		Support/Relationship?	p value	Alpha
H10					
a. Exc Returns –1 0	Forecast Freq.	Lo Cert.	Yes	0.03	0.05
b. Exc Returns –1 0	Forecast Freq.	Hi Cert.	Yes	0.06	0.1
c. Exc Returns –1 1	Forecast Freq.	Lo Cert.	No		
d. Exc Returns –1 1	Forecast Freq.	Hi Cert.	Yes	0.03	0.05
e. Exc Returns –1 0	Decile?	Lo Cert.	No		
f. Exc Returns –1 0	Decile?	Hi Cert.	No		
g. Exc Returns –1 1	Decile?	Lo Cert.	No		
h. Exc Returns –1 1	Decile?	Hi Cert.	No		
i. Exc Returns –1 0	#firms followed	Lo Cert.	No		
j. Exc Returns –1 0	#firms followed	Hi Cert.	No		
k. Exc Returns –1 1	#firms followed	Lo Cert.	No		
l. Exc Returns –1 1	#firms followed	Hi Cert.	No		
m. Exc Returns –1 0	#2 digit SICs	Lo Cert.	No		
n. Exc Returns –1 0	#2 digit SICs	Hi Cert.	No		
o. Exc Returns –1 1	#2 digit SICs	Lo Cert.	No		
p. Exc Returns –1 1	#2 digit SICs	Hi Cert.	No		
q. Exc Returns –1 0	Gen. Exp.	Lo Cert.	No		
r. Exc Returns –1 0	Gen. Exp.	Hi Cert.	No		
s. Exc Returns –1 1	Gen. Exp.	Lo Cert.	No		
t. Exc Returns –1 1	Gen. Exp.	Hi Cert.	No		
u. Exc Returns –1 0	Firm Exp.	Lo Cert.	Yes	0.0046	0.005
v. Exc Returns –1 0	Firm Exp.	Hi Cert.	No		
w. Exc Returns –1 1	Firm Exp.	Lo Cert.	No		
x. Exc Returns –1 1	Firm Exp.	Hi Cert.	No		
y. Exc Returns –1 0	Lagged frcst	Lo Cert.	No		
z. Exc Returns –1 0	Lagged frcst	Hi Cert.	No		
aa. Exc Returns –1 1	Lagged frcst	Lo Cert.	No		
ab. Exc Returns –1 1	Lagged frcst	Hi Cert.	No		

TABLE 6 continued: Hypotheses and Research Questions results

Hyp.	Elements		Support/Relationship?		p value	Alpha
RQ5						
a. Exc Returns –1 0	Forecast Freq.	Lo Act.	No			
b. Exc Returns –1 0	Forecast Freq.	Hi Act.	No			
c. Exc Returns –1 1	Forecast Freq.	Lo Act.	No			
d. Exc Returns –1 1	Forecast Freq.	Hi Act.	No			
e. Exc Returns –1 0	Decile?	Lo Act.	No			
f. Exc Returns –1 0	Decile?	Hi Act.	No			
g. Exc Returns –1 1	Decile?	Lo Act.	No			
h. Exc Returns –1 1	Decile?	Hi Act.	No			
i. Exc Returns –1 0	#firms followed	Lo Act.	No			
j. Exc Returns –1 0	#firms followed	Hi Act.	No			
k. Exc Returns –1 1	#firms followed	Lo Act.	No			
l. Exc Returns –1 1	#firms followed	Hi Act.	No			
m. Exc Returns –1 0	#2 digit SICs	Lo Act.	No			
n. Exc Returns –1 0	#2 digit SICs	Hi Act.	No			
o. Exc Returns –1 1	#2 digit SICs	Lo Act.	No			
p. Exc Returns –1 1	#2 digit SICs	Hi Act.	No			
q. Exc Returns –1 0	Gen. Exp.	Lo Act.	Rel'ship-exp. dir'n.		0.054	0.1
r. Exc Returns –1 0	Gen. Exp.	Hi Act.	No			
s. Exc Returns –1 1	Gen. Exp.	Lo Act.	No			
t. Exc Returns –1 1	Gen. Exp.	Hi Act.	No			
u. Exc Returns –1 0	Firm Exp.	Lo Act.	No			
v. Exc Returns –1 0	Firm Exp.	Hi Act.	No			
w. Exc Returns –1 1	Firm Exp.	Lo Act.	Rel'ship-exp. dir'n.		0.0508	0.05
x. Exc Returns –1 1	Firm Exp.	Hi Act.	No			
y. Exc Returns –1 0	Lagged frcst	Lo Act.	No			
z. Exc Returns –1 0	Lagged frcst	Hi Act.	No			
aa. Exc Returns –1 1	Lagged frcst	Lo Act.	No			
ab. Exc Returns –1 1	Lagged frcst	Hi Act.	No			

Rel'ship-exp. dir'n.: Relationship – expected direction

TABLE 6 continued: Hypotheses and Research Questions results

Hyp. Elements	Support/Relationship?	p value	Alpha
H11			
DEquity			
a. Forecast Freq.	No		
b. Decile?	No		
c. #cos followed	No		
d. #2 digit SICs	Relationship-opposite to predicted direction	0.0865	0.1
e. Gen. Exp.	No		
f. Firm Exp.	Relationship-opposite to predicted direction	0.0280	0.05
g. Lagged frcst	No		
DDebt			
a. Forecast Freq.	No		
b. Decile?	No		
c. #cos followed	No		
d. #2 digit SICs	No		
e. Gen. Exp.	No		
f. Firm Exp.	No		
g. Lagged frcst	No		
H12			
DEquity			
a. Forecast Freq.	No		
b. Decile?	No		
c. #cos followed	No		
d. #2 digit SICs	No		
e. Gen. Exp.	No		
f. Firm Exp.	Relationship-opposite to predicted direction	0.0056	0.01
g. Lagged frcst	No		
DDebt			
a. Forecast Freq.	No		
b. Decile?	No		
c. #cos followed	No		
d. #2 digit SICs	No		
e. Gen. Exp.	No		
f. Firm Exp.	No		
g. Lagged frcst	No		
H13			
DEquity, DDebt			
a. Forecast Freq.	No		
b. Decile?	No		
c. #cos followed	No		
d. #2 digit SICs	No		
e. Gen. Exp.	No		
f. Firm Exp.	No		
g. Lagged frcst	No		

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